*October 1977*

# Smithsonian

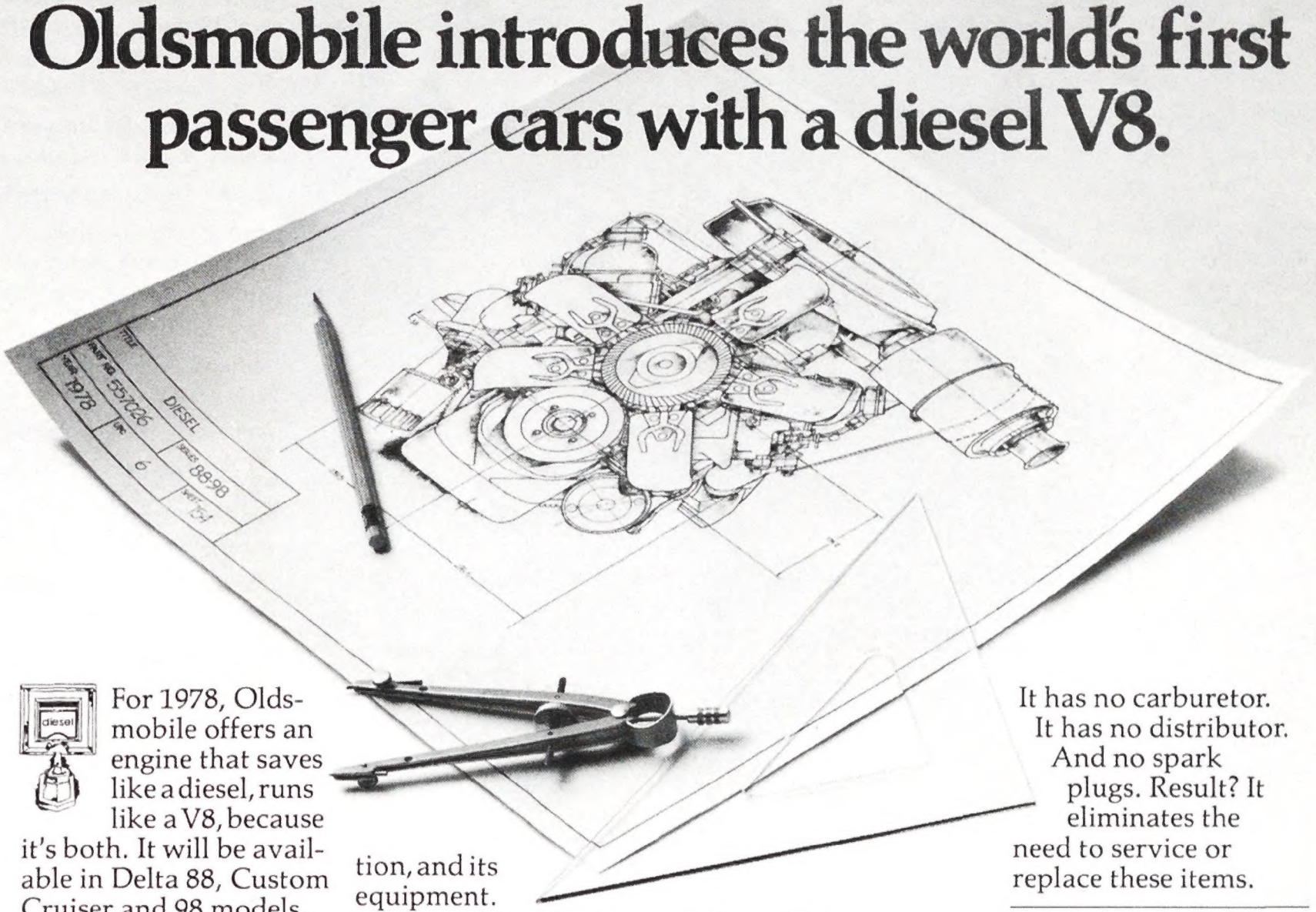
The Amazon as part of the biosphere (p. 100); at right, a native crested hoatzin

BLENDED CANADIAN WHISKY. 80 PROOF. SEAGRAM DISTILLERS CO., N.Y., N.Y.

# How the rich recycle.

ANNOUNCING A SIGNIFICANT ENGINEERING ADVANCE:

# Oldsmobile introduces the world's first passenger cars with a diesel V8.







For 1978, Oldsmobile offers an engine that saves like a diesel, runs like a V8, because it's both. It will be available in Delta 88, Custom Cruiser and 98 models. And it combines the basic economy of a diesel with performance you might not expect from a diesel.

## DIESEL ECONOMY

Diesel *means* fuel economy. That's what a diesel is all about:

**1978 EPA MPG ESTIMATES WITH DIESEL V8 ENGINES**

| | Hwy. | City | Comb. |
|---|---|---|---|
| **Delta 88** | 30 | 21 | 24 |
| **Ninety-Eight** | 30 | 21 | 24 |
| **Custom Cruiser** | 27 | 19 | 22 |

As you can see, these ratings are excellent, for full-size cars. EPA ratings are estimates; your mileage may vary depending on how and where you drive, your car's condition, and its equipment.

Something else to consider: You not only get *more miles per gallon* with a diesel, you also get *less cost per gallon*, based on traditionally lower prices for diesel fuel compared to unleaded gasoline.

## V8 DESIGN

Diesels have been around since the 1890s. And response and acceleration have never been their strong suit. But you'll be pleasantly surprised by these new diesel-powered Oldsmobiles.

This new diesel V8 has one of the highest power-to-weight ratios among diesel cars on the road today.

It offers acceleration and a liveliness that the most powerful diesel foreign cars in America don't have. And it's quiet for a diesel, too.

## NO SPARK PLUGS NO CARBURETOR

The new diesel V8 simply does not have many of the components that require tune-ups.

It has no carburetor. It has no distributor. And no spark plugs. Result? It eliminates the need to service or replace these items.

## TEST DRIVE A DIESEL AT YOUR OLDS DEALER'S

Only your Olds dealer can offer you a selection of V8 power —diesel or gasoline— in a passenger car. No other dealer can make that statement.

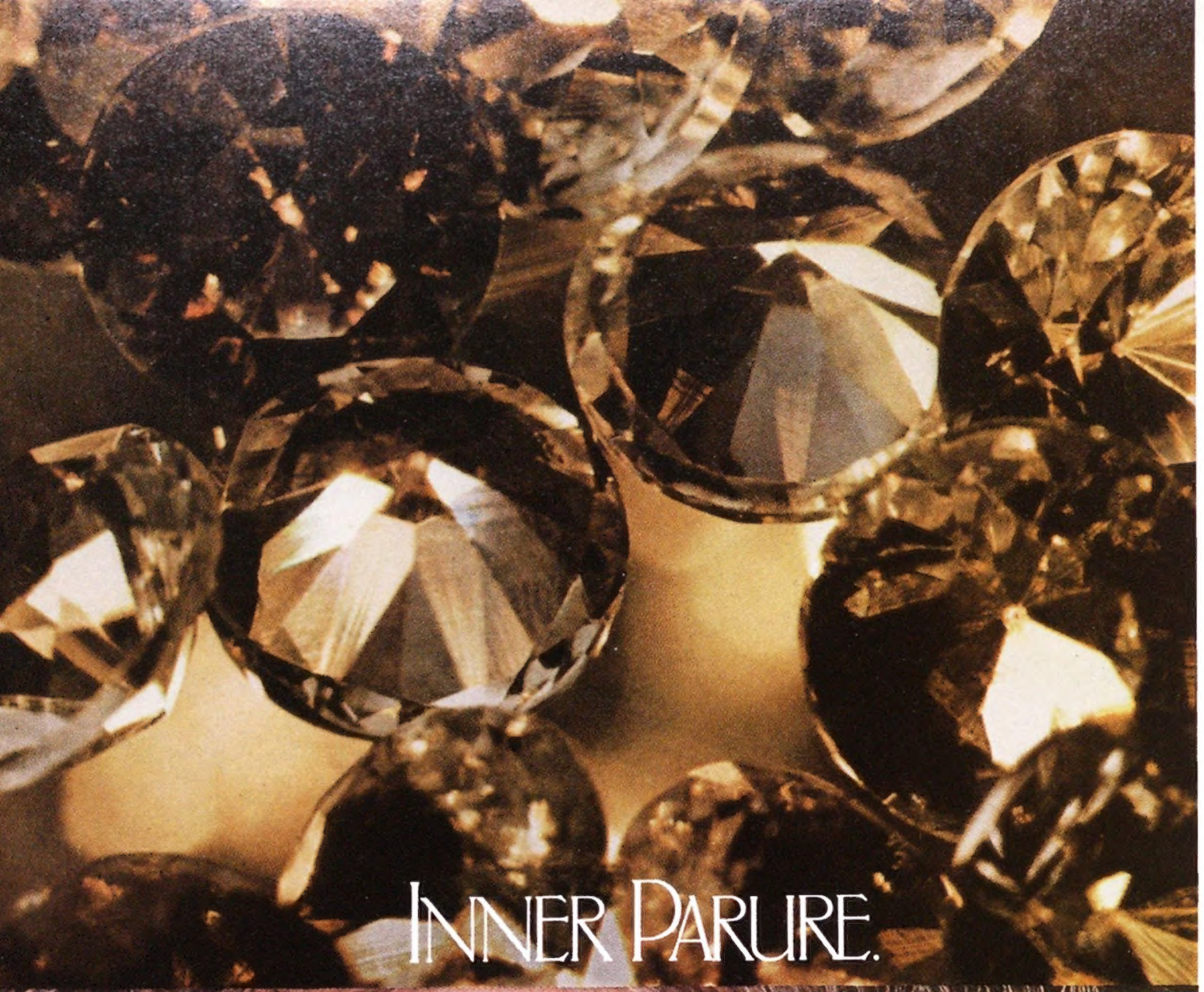
In fact, we have made many strong statements about the new diesel V8. We invite you to put them to the test. Stop in at your nearest Oldsmobile dealer's and ask for the keys to an Olds 88, 98 or Custom Cruiser equipped with this remarkable diesel V8 engine.

In this day and age, it's certainly worth checking out.

Oldsmobile

**Can we build one for you?**

GM



Look closely at any woman and you will come to understand the inner mood behind her outer expression.

Similarly, every great perfume has its inner mood of soul.

Parure is a wildly original blend of lilac and amber, cypress and plum blossoms.

Outwardly it expresses a radiant beauty, remote, almost unobtainable.

But consider it as you would a diamond. Peer deep within. You will discover an inner fire, burning with promise like the rising sun.

You don't just dab on a perfume like Parure.
You wear it body and soul.

PARURE
BY GUERLAIN.

Secretary of the Smithsonian Institution
S. Dillon Ripley

Editor and Publisher Edward K. Thompson

Executive Editor Ralph Backlund

Board of Editors Don Bronkema, Grayce P. Northcross, James K. Page jr. (on leave), Edwards Park, Bennett Schiff, John P. Wiley jr., Richard L. Williams

Associate Editors Marlane A. Liddell, Dana Little, Dee McRae, Jane Scholl, Nancy Seaman

Picture Associate Caroline Despard

Assistant Editors Bonnie Gordon, Joyce McCarten, Donna Reifsnider, Michael Watterlond
Editorial Assistant Nancy Evans

Associate Publisher Joseph J. Bonsignore
Production Nannie Shanahan
Business Carey O. Randall

Advertising Director Thomas H. Black

Circulation-Promotion Director Anne Keating

Board of Regents, Smithsonian Institution

*Ex Officio*

Chief Justice of the United States
Warren E. Burger, Chancellor
Vice President of the United States
Walter F. Mondale

*Appointed by the President of the Senate*

Honorable Barry M. Goldwater
Honorable Henry M. Jackson
Honorable Claiborne Pell

*Appointed by the Speaker of the House*

Honorable Elford A. Cederberg
Honorable George H. Mahon
Honorable Corinne C. (Lindy) Boggs

*Appointed by a Joint Resolution of Congress*

Mr. John Paul Austin
Dr. John Nicholas Brown
Dr. William A. M. Burden
Dr. Murray Gell-Mann
Dr. Caryl P. Haskins
Honorable A. Leon Higginbotham jr.
Mr. Thomas J. Watson jr.
Mr. James E. Webb

National Board of the Smithsonian Associates

Hon. George C. McGhee, Chairman, Mr. Robert O. Anderson, Mr. William S. Anderson, Mr. Harry Hood Bassett, Mr. Henry C. Beck jr., Mr. Keith S. Brown, Mrs. Jackson Burke, Hon. William T. Coleman jr., Mr. Gaylord Donnelley, Mr. Thomas M. Evans, Mr. Charles T. Fisher III, Mrs. David L. Guyer, Mrs. Karl C. Harr jr., Mr. Henry J. Heinz II, Hon. John N. Irwin II, Mr. James M. Kemper jr., Mrs. Robert A. Magowan, Mrs. Robert S. McNamara, Mr. Scott McVay, Dr. Ruben F. Mettler, Mr. John R. Norton III, Mr. Charles M. Pigott, Mr. George S. Pillsbury, Mr. Arthur A. Seeligson jr., Mr. Vernon Taylor jr., Mr. James O. Wright

*Smithsonian* is published monthly by the Smithsonian Associates, 900 Jefferson Drive, Washington, D.C. 20560. © Smithsonian Institution 1977. All rights reserved. Reproduction in whole or in part without permission is prohibited. Subscription price $12 a year in U.S. and possessions, $15.50 elsewhere. Single copy price $1.25. Second-class postage paid at Washington, D.C. Editorial offices, 900 Jefferson Drive, Washington, D.C. 20560. Advertising and circulation offices at 420 Lexington Ave., New York, New York 10017. Please address all subscription correspondence and change of address information to P.O. Box 5300, Greenwich, Conn. 06830

*October 1977*

# Smithsonian

Volume 8, Number 7

## *Table of Contents*

COVER: The hoatzin is one of the more bizarre of the 100,000 plant and animal species of the Amazon basin biosphere (p. 100). Agile climber but poor flier, it scales low treetops. Photograph by Loren McIntyre

6 The view from the castle: Secretary Ripley's comments

10 Letters to the Editor

20 Phenomena, comment and notes by James K. Page jr.

31 Around the Mall and beyond by Edwards Park

38 Solar cells, those silicon wafers that generate electricity almost by magic, find down-to-earth uses
By David Morris

46 Celebrating the Rubens Year, 400th anniversary of the birth of a master of baroque painting
By Rudolph Chelminski, photographs by Dmitri Kessel and the Royal Museum of Fine Arts, Antwerp

58 The dreaded fever tick crashes a helicopter roundup of cattle in the Texas border country
By David Snell, photographs by A. Y. Owen

66 The glorious *Book of Kells* comes from Dublin to be seen in U.S. cities for the first time
By Alfred Friendly

76 Seven teen-age math prodigies take off from Johns Hopkins on the way to advanced degrees
By David Nevin, photographs by Yoichi R. Okamoto

91 Elihu Yale was a rascal, but his tasteful treasures saved a struggling American college
By Merlin Waterson

100 The ancient Amazon river basin, vital to the biosphere, faces threat of ruin at the ingenious, exploitative hand of Man (second of two parts)
By Robert Campbell, photographs by Loren McIntyre

115 "Splendors of Nature," an exhibition devoted to sheer beauty, opens at the Smithsonian
Photographs by Robert C. Lautman

122 John Bartram, self-taught Colonial botanist, filled European gardens with his American finds
By Joseph Kastner

131 Radical feminist Victoria Woodhull, comely free-love advocate, was a Presidential candidate in 1872
By Julia Davis

142 Preview of the tenth Folklife Festival
By Ralph Rinzler and Peter Seitel

152 Book reviews

160 Additional reading

161 Picture credits

164 October events at the Smithsonian

170 Smithsonian tours

172 Mnemonics: hard to say, harder to remember
By Michael Olmert

HOW COME CITY HOSPITAL HAS AN ATOMIC-SCANNING RENOSCOPE AND WE DON'T!
HOW COME MEMORIAL HOSPITAL HAS AN ISOTOPE-TRIGGERED VIRO-CALCULATOR AND WE DON'T!

# Alas, hospitals are only human.

They've got to keep up with the Joneses.

For the hospital board, it must seem a simple logic of survival. Beds are filled by patients. Patients are provided by physicians. Physicians, understandably, are attracted by the latest equipment.

But for us who pay the bills, that logic costs dearly.

Unnecessary duplication of expensive technology is fueling a rampant inflation.[1] The hospital bill—and the health insurance which pays it—is now one of the fastest-rising costs in our whole economy.[2]

Can we slow it down? Ætna believes so. If doctors were to assign patients to *any* of several hospitals nearby, expensive equipment could be shared. Specialized facilities, staff, even beds would be more efficiently used.[3]

Establishing state commissions to set limits on hospital expenditures could help, too. In Maryland and Connecticut, such commissions have been at work since 1974. They've lopped some big numbers off hospital budgets,[4] without reducing the quality of care.

And Ætna is encouraging local medical societies to monitor doctors' use of hospitals. Was the length of stay appropriate? Was admission necessary in the first place?[5] If all of us involved continue to raise such questions, insurance costs *can* be controlled. Don't underestimate your own influence. Use it, as we are trying to use ours.

# Ætna wants insurance to be affordable.

[1] Consider the cost of the CAT scanner, the latest thing in diagnostic machinery. (The CAT—Computerized Axial Tomograph—takes pictures of cross-sections of the body.) If every one of the 6,000 general hospitals in America bought a CAT, the initial investment alone would cost us all nearly *three billion dollars.*

[2] Ten years ago, health care costs consumed about 6% of the gross national product. Today it is close to 9%. Center stage in this inflationary drama is the hospital bill, which has doubled in the last five years!

[3] This principle could eliminate many wasteful situations. In Philadelphia, for instance, 16 hospitals have open heart surgery programs. But according to a government study, only five used them enough to be considered efficient. Waste applies to much simpler equipment, too, like beds. The government estimates there are at least 100,000 unnecessary hospital beds empty each day, at a cost of $2 billion a year.

[4] As much as $45 million saved in Maryland alone, in 1975.

[5] Most medical societies have a "Professional Standards Review Organization" created for just this kind of review for Medicare and Medicaid patients. Ætna believes the potential savings justify such review of all patients.

Ætna
LIFE & CASUALTY

*Secretary Ripley's comments*

# *The view from the castle*

*Behind every exhibit the public enjoys*
*is an invisible, dedicated staff—and*
*that can be a museum's greatest treasure*

The buildings that serve as public museums are, in most cases, something more than just a series of lofty halls containing exhibits. Somewhere behind the scenes lurk vast racks and cabinets full of specimens or objects that are perhaps waiting to be rotated on exhibition, but also perhaps rotting away. What escapes people's attention is the fact that the public exhibits are put on only after the most painstaking research has taken place as to the identity and relationships of objects, and that the care of these objects, whether paintings or scientific specimens, is an endless task.

Nowadays, especially, the message is coming home to us that there is only a finite number of such objects, and that all are dwindling before our eyes at a devastating rate. Old things decay continuously, while the world of nature is increasingly being raped and vandalized despite all the lip service we pay to environmental protection and conservation.

The glue that sticks a museum together is people. It is the exhibits specialists, curators and conservators who manage to produce, authenticate and care for what the public comes to see. Museums suffer from a dearth of such experts in all three categories. Exhibits specialists can make more money in industry; curators, in the public mind, are obscure little people, happy at their work, who revel in being neglected and underprivileged; and expert conservators are hard to find; there are only a few hundred in the United States.

As a museum administrator, I watch with continuing alarm the deterioration of collections and, at the same time, the constantly increasing popularity of museums. Is it possible that disenchantment with much of the deadening rote of education and boredom with the sameness and lack of content of television, instead of dampening the thirst for information, may turn that need to other channels? And thus the popularity of museums?

My special affection is reserved for people who work in museums. I myself have been a curator all my professional life. Lack of appreciation of the role of curators angers me, and frustrates me as well. Somehow, as an administrator, I must have failed if I cannot help to elevate the public image of a curator (which of course I have exaggerated in the lines above) and to create more resources for them.

At the Smithsonian we equate curators with professors, by rank and tenure and career promotion. We encourage curators to publish, to teach and to view themselves as our faculty. But in the past their specialties have attracted fewer candidates than the physical sciences, or the social sciences on the humanist front. Thus, curators of proved ability are far rarer than professors with the same qualities.

If we cannot make the museum profession attractive to highly qualified professionals and bring them into the ranks of curators, we will have failed our public as well as ourselves. Without them, we are in danger of turning into that stereotype I described at the beginning: a musty behind-the-scenes space, full of endless trays or racks of specimens and objects, all crumbling away for lack of the enthusiasm, dedication and sheer love that go into the creation of a museum professional.

S. Dillon Ripley

*Clockwise from the top: Palace Vase, height 8½", $135.00 • Prunus Vase, height 7", $135.00*
*Four Flowers Bowl, diameter 7¼", $125.00 • Three Fruits Bowl, diameter 7¾", $92.50 • Temple Jar, height 6¼", $167.50*

# STEUBEN ANNOUNCES THE CLASSICS

Throughout history basic forms have passed from one civilization to another.

Among the most persistent have been the classic shapes of the vases and bowls of ancient China.

Now "The Classics" have been created in Steuben crystal by designer Donald Pollard—five ancient Chinese forms which, exploiting the properties of crystal, demonstrate a harmonious relationship between the outer form and the inner wall.

In ancient China, the *Prunus Vase* and *Temple Jar* were used for holding flowers. The *Palace Vase* often served as an ornament.

The bowls are symbolically named: the *Three Fruits Bowl* for the Three Abundances, the *Four Flowers Bowl* for the Flowers of the Four Seasons.

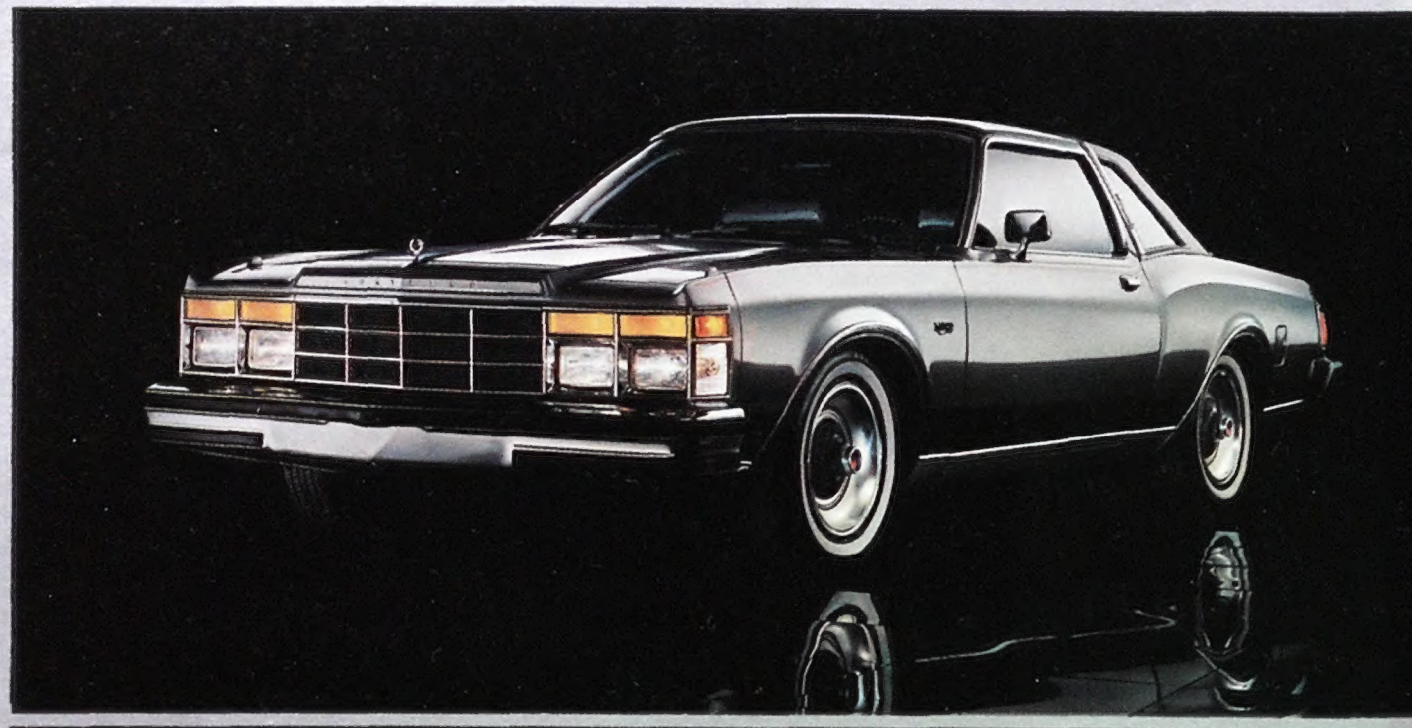
"The Classics" complement one another in size and proportion; they may be owned individually or in a collection.

Because the forms are simple and unadorned, they are compatible with any setting.

STEUBEN GLASS

A PART OF CORNING GLASS WORKS SINCE 1918
717 FIFTH AVENUE, NEW YORK, N.Y. 10022 • (212) 752-1441

# The 1978
# Never before has there been



## LeBaron 2-Door

### A personal car inside and out.

Should you be looking for a sleek, personal car this year, make Chrysler LeBaron your choice. It's the first of a totally new class of automobiles. LeBaron 2-door comes with many personal appointments of luxury. Overhead lighting. Velour seats. And soft leather seating is available on the Medallion model. In short, LeBaron gives you the pleasures of a luxury car at a price that makes it a pleasure to own.

## LeBaron 4-Door

### Luxurious and affordable.

The nice thing about LeBaron is the way it satisfies your taste for luxury but still has regard for your budget. LeBaron 4-door, for example, is elegant both inside and out. The luxurious LeBaron pictured at your right is equipped with a padded vinyl roof, available wire wheel covers, plush velour seats, and much more. In fact, it comes with many of the same comfort and convenience features you'd find on $12,000 sedans. But LeBaron can be yours for many thousands of dollars less.

## LeBaron Town & Country

### There are many new wagons, but there is still only one Chrysler.

If you have a family, or just like the feel of a wagon, this could very well be your choice for 1978. LeBaron Town & Country is a lighter, more efficient size luxury wagon. But don't let that fool you. It has 90 percent as much passenger space as last year's full-size Town & Country. And though LeBaron is smaller outside, it's still big on luxury inside.

# Chryslers. such a luxury of choice.

## Cordoba

### The ultimate personal car.

Cordoba has been the choice of many discerning car buyers. In fact, it's the most successful Chrysler ever introduced. And that's quite an accomplishment. But then, Cordoba is quite an automobile. This year's Cordoba is newly styled to make it the ultimate personal luxury car. From its classic lines, to its impeccable luxury, to its affordable price, Cordoba has the utmost consideration for quality.

## Newport

### So much Chrysler for so little.

There are those of us who demand full-size comfort. Then, there are those of us who demand value. Somehow, Newport has managed to combine both. For 1978, Newport offers you standard comfort features like power steering and brakes, steel-belted radials, automatic transmission, rich foam cushions, even the Electronic Lean Burn engine. And the price? Well, let's put it this way. Newport is our most affordable full-size Chrysler.

## New Yorker

### The feel of luxury and a sense of value.

Traditionally, New Yorker's always had a knack for bringing pleasure to even the most fastidious car owner. This year's New Yorker may be the finest yet. It literally surrounds you in comfort. And the most surprising comfort feature of all, is New Yorker's very reasonable price.

But whatever type of luxury you want to Buy or Lease for 1978, the choice is up to you. At your Chrysler-Plymouth Dealer.

CHRYSLER

A PRODUCT OF CHRYSLER CORPORATION

The luxury of Henredon upholstered furniture is welcome in any setting. Whether relaxed or refined. This chair with ottoman, for instance, is exceptional in comfort, design and workmanship—covered in your choice of the choicest fabrics. Henredon's comprehensive collection encompasses traditional to contemporary themes and includes sofas, loveseats, to-the-inch styles, chairs, benches and ottomans. See them all by sending $1.00 for Upholstered Furniture brochure to Henredon, Dept. S-107, Morganton, N.C. 28655.

Our Best Silver
Sterling—a gracious gift, an elegant possession. Cross sterling silver ball pens, pencils and soft tip pens for ladies and gentlemen are available at better stores worldwide—from $17.50*.
CROSS®
SINCE 1846
*Suggested Price

# *Letters to the Editor*

## *Pompidou center*

Dear Sir: Rudolph Chelminski's article and Dmitri Kessel's pictures of the Pompidou cultural center known as Beaubourg are splendid. We found the architecture, both inside and out, lively and exciting, and we enjoyed the permanent collection very much.

Despite the crowds in the exhibit rooms, on the fabulous escalators and in the fine rooftop restaurant, to say nothing of those surrounding the mimes and sword-swallowers in the square on a Sunday afternoon, we happened to come upon a few naysayers among the Parisians.

Still chuckling over the remarks of one person who directed us to the center but at the same time called it a monstrosity and a ruination of the city, we came upon a tiny shop, the French equivalent of a general store, whose proprietor had apparently been asked directions once too often. Pasted in the window, amid the jumble, was the exasperated note: "Le Beaubourg! C'est pas ici!"

*Mrs. Charlotte Dickinson Moore*
Bethesda, Maryland

Dear Sir: The team of De Gaulle-Pompidou have climaxed the rude rape of Paris by creating a sadomasochist tour de force, out of what might have been a great architectural beauty, by eviscerating it into an exoskeleton draped with veins, arteries, windpipe, intestinelike tubes and other unmentionables.

Your fish-eye shot of the center seems to call for one addition—a Buckminster Fuller dome clapped over it.

*Lawrence F. Jones,* Captain USNR Ret.
Provincetown, Massachusetts

Dear Sir: In regard to your August cover story, it is true that until the opening of the Beaubourg library there was no public reference center in Paris, but there is a large and thriving public library system. It has 80 branches but it does not have a central agency for its patrons. It is this deficiency that the Beaubourg library is intended to remedy.

*Frederick J. Isaac*

Baltimore

*Unlike American public libraries, these 80 branches require that a patron be a resident of the municipality in which the library is situated and present proper identification to gain admittance. At Beaubourg, in contrast, anyone can walk in—no identity cards required—and can use, for example, the audiovisual materials, foreign language cassettes and international periodicals—all of which are unavailable in the municipal system.* Ed.

## *Admiral Beaufort*

Dear Sir: In Alfred Friendly's article on Admiral Beaufort, you have expatriated the west coast of Ireland to the Turkish Mediterranean Sea in the caption for the map on page 74.

*Dr. Donnan O'Carroll*

Altoona, Wisconsin

*May a Force 13 Beaufort storm strike the picture and research departments of* SMITHSONIAN, *along with others, up to and including the bridge, who saw the map. Dr. O'Carroll is one of a number of readers who spotted this egregious and inexcusable error.* Ed.

## *Roller coasters*

Dear Sir: Robert Cartmell's article on roller coasters brought back many beautiful memories.

My father, James L. Martz, worked for the Philadelphia Toboggan Company from 1929 until his death in 1976, during which he built 81 coasters and other rides. Many times he was appointed by the courts to testify as an expert in lawsuits. He always—alone—made the first test drive and used to say, "They're my babies and any party that can afford a coaster is assured success."

His real pride and joy was the "Swamp Fox" in the Grand Strand Park in Myrtle Beach, South Carolina. He thought it to be—in length, thrills, speed and safety—the best ride he had ever built, and that

**Children have always dreamed of** running away to join the circus. And so it is with FunnyFace, captured in ruffles and greasepaint by the artists of Cybis.

FunnyFace dreams in porcelain, 10-1/2 inches tall. And he's just one of the inhabitants of the enchanted world of Cybis.

A world where carousel horses prance, baby owls practice wisdom, turtles live in jewelled houses, and flowers and children bloom forever.

Enter our world. Your dream is waiting there.

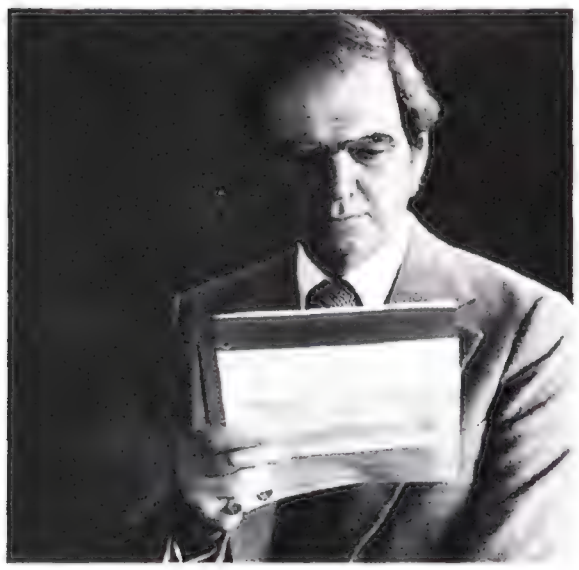
*Cybis Porcelains...from 25 dollars to 5 thousand dollars. The oldest enduring porcelain art studio in America.*

*We're pleased to offer both the full-color introductory guide to the current Cybis Collection plus Crown Publishers' book "Poems for Children and Other People" illustrated with Cybis sculpture. For both, send $6.45 to Cybis ("See-bis") Porcelains at 65 Norman Avenue SC, Trenton, New Jersey 08618.*

©CYBIS 1976

# Subscribe to the health letter with a Harvard degree.

These days, the problem isn't finding health information. The problem is sorting out accurate, reliable health information from the plethora of articles, books, and magazines available.



That's why you should subscribe to the only health letter published for the general public by the faculty of a leading medical school: *The Harvard Medical School Health Letter.*

Every month, you'll receive a six-page report covering topics like cancer, heart attack, ulcers, diet, and exercise —clearly and accurately.

Subscribe now. Send $10 for a year's subscription to:

**The Harvard Medical School Health Letter**
Harvard University Press Building
79 Garden Street
Cambridge, Mass. 02138

☐ $10.00 check enclosed
($11.00 Canada; $15.00 Foreign)

Name _____ (please print)

Address _____

City _____ State _____ Zip _____

☐ Send me bulk rates for my company/ organization.

If you are not completely satisfied with your first issue, your money will be refunded.

SM


should count for something from a builder of 81 rides. He was a brilliant, self-taught man.

*Mrs. Catherine Wolanski*
West Nyack, New York

## *Coal*

Dear Sir: In David Sheridan's article, "A second Coal Age promises to slow our dependence on imported oil," there are many interesting and worthwhile points but there also are some errors.

Although Green River in Sweetwater County, Wyoming, has experienced phenomenal growth in recent years, most of it is attributable to rapid expansion in the trona mining and refining industry rather than to coal development.

When you reported that the old (1893) hospital was the only one in the county, you should have mentioned that a new hospital will soon be completed.

Mr. Sheridan implies that "alcoholism, accidents, absenteeism, depression, divorce, and delinquency" have given Sweetwater County the third highest per capita suicide rate in the nation. This may have been true a few years ago, but I believe it has declined. Also, your picture showing construction of the Jim Bridger power project is several years old. The article states that half the population of Rock Springs lives in trailers, but our updated figures indicate there are only 26 percent living in mobile homes. Rock Springs is listed erroneously as the county seat of Sweetwater County—in fact, Green River is and has been the county seat for some 50 years.

It is true that Rock Springs has a troublesome dust problem, but the prevailing winds, from the west, make it unlikely that abandoned strip mines and one active one some 25 miles away, east of the city, are the source.

*Kim Briggs,* Executive Director
Southwest Wyoming Industrial Association
Rock Springs, Wyoming

SMITHSONIAN *is glad to publish Mr. Briggs' list of mitigating improvements, including the completion of three of the four units of the Jim Bridger power project (see below), but boomtowns such as those described in the article have not yet discovered a cure-all for all their serious socioeconomic problems.* Ed.

Dear Sir: I enjoyed your article on coal and was delighted to see that you did not say we have enough coal "for 500 years" or "for centuries" as so many have said. You quoted the General Accounting Office's statement that if President Carter's energy plan goes into effect, the known coal reserves would be exhausted in 74 years. This figure is correct and it corre-

Where once a trailer park cluttered the grounds, this Jim Bridger power unit shows a clean face-lift.

# Save a lot of money. Buy a good used camera.

When should you buy a used camera?

When it's a brand-new Minolta SR-T, the classic 35mm single lens reflex owned by more than three million people.

And especially now when a Minolta SR-T costs less to own than ever before.

What have three million people seen in it?

For one thing, an easy-to-use camera. The patented through-the-lens metering system tells you the correct exposure. You just match up two needles in the viewfinder to set it.

For another thing, the SR-T is a fast-handling camera. The viewfinder tells you everything you need to know to get a sharp, perfectly exposed picture. So you'll never lose sight of your subject while you fiddle with camera controls.

And the Minolta SR-T is a system camera. It accepts any of almost 40 interchangeable lenses that Minolta makes in two series—the advanced Rokkor-X and the moderately priced Celtic brand. And they all have the Minolta bayonet mount that makes lenses easy to change.

So look into a Minolta SR-T. The good used camera that's easy to use. And easy to buy.

For more information, see your photo dealer or write Minolta Corporation, 101 Williams Drive, Ramsey, N.J. 07446.

# MINOLTA

**More than three million people own a Minolta SR-T.**

**Icelandic Toasters**

*Knit scarf & cuff cap from arctic sheep, whose wool is silkier & softer than ordinary wool. Natural tones of white, brown & charcoal. Water repellent. Hand washable. Ideal for Christmas giving – one size fits all. Cap $13.00. Scarf 10" x 60", $14.00.*

**Selected for you from the Carroll Reed Catalog.**

**Carroll Reed**

Dept. 836 North Conway, N.H. 03860
Phone: (603) 447-2511

| Circle Item | Quantity | Amount |
|---|---|---|
| Cuff Cap $13.00 | _____ | _____ |
| Scarf, 10" x 60" $14.00 | _____ | _____ |
| | Postage & Handling $1.50 | |
| | Total Amount | _____ |

Check Enclosed ☐ VISA ☐ MC ☐ AEX ☐
Charge Card & Interbank No. _____
☐ **Please send catalog**
Name _____
Address _____
_____ Zip _____

Sakowitz' store away from stores is the 1977 Christmas Book: joyously different gifts from extravagant luxuries to little indulgences. Send 1.00, to be applied toward your first purchase. Sakowitz, P.O. Box 1431F, Houston, TX 77001.

Sakowitz



**Give a Bauhaus chess set, an Alvar Aalto free-form vase, an Isamu Noguchi "light sculpture" paper lantern.**

# Gift Catalog
## The Museum of Modern Art

Objects represented in the Museum's Design Collection and a distinctive collection of greeting cards, notepapers, calendars, books, games, and toys from $3.95 to $300.

The Museum of Modern Art/Box 1220, Radio City Station/N.Y. 10019 008

☐ Please send the 1977-78 Gift Catalog by first class mail. Enclosed is $1.

☐ Please send _____ *MoMA Tote Bags.* Sturdy sailcloth with wide natural leather panel and straps. 15 x 12½ x 5". _____ Black canvas. _____ Beige canvas. $21. postpaid.

☐ Please send _____ *Great Addresses,* MoMA's elegant address book, illustrated with photographs of residential structures by internationally esteemed architects. Fine beige linen-finish paper, thumb-indexed, buckram binding stamped with bronze or gold-colored inks. Mailing carton. 6¼ x 7½". _____ Dark red. _____ Beige. $10.50 postpaid.

Name _____

Address _____

Catalog free with order. N. Y. State residents add applicable sales tax.


sponds to estimates by the U.S. Geological Survey, based on about a five percent annual growth.
*Albert A. Bartlett*
Department of Physics and Astrophysics
University of Colorado
Boulder, Colorado

Dear Sir: Your coal article and the lead item in "Phenomena, comment and notes" juxtapose—well, loosely—the "virtually unkillable" dandelion and the lifeless desert created by abandoned strip-mining sites. Perhaps we should consider setting these against each other.
*W. E. Greig*
Somerset, New Jersey

## *Phenomena, comment and notes*

Dear Sir: In citing a guest editorial by the Center for Science in the Public Interest (CSIPI) in *Chemical & Engineering News,* James K. Page jr. reported that there have been 300 fatalities and 10,000 disabling injuries to mar the nuclear industry's safety record. The former Atomic Energy Commission kept meticulous records and confirmed in a document (WASH 1192) that, since the dawn of the nuclear age, there have been 300 fatalities but only six of these were related to radiation exposure. As for the 10,000 disabling injuries, CSIPI neglects to say that they cover 32 years and that only 41 of those injured suffered radiation injuries.
*Paul Turner,* Vice President
Atomic Industrial Forum, Inc.
Washington, D.C.

## *"Waste no pity upon these foxes"*

Dear Sir: James J. Kilpatrick's article, "Waste no pity upon these foxes," is tasteless, witless, offensive. Cruelty to animals shouldn't be a subject for humor.
*Walter Mourant*
Los Osos, California

Dear Sir: James J. Kilpatrick's literate humor surely should be recorded in someone's collection, "Best American Humor."
*Dr. William P. Viall*
Kalamazoo

## *African 'village'*

Dear Sir: Warren Robbins' article, "An African 'village' on Capitol Hill" reminded me of the original artwork I saw on a

# Begin at the beginning...

## Or come in in the middle...Or plunge right into the 20th century...

Start with the early stirrings of civilization and follow as far as you like man's zigzag course to the present.

Or perhaps you'd rather come in in the middle—with the Huns, King Arthur, Imperial China. Or plunge right into the thicket of contemporary affairs.

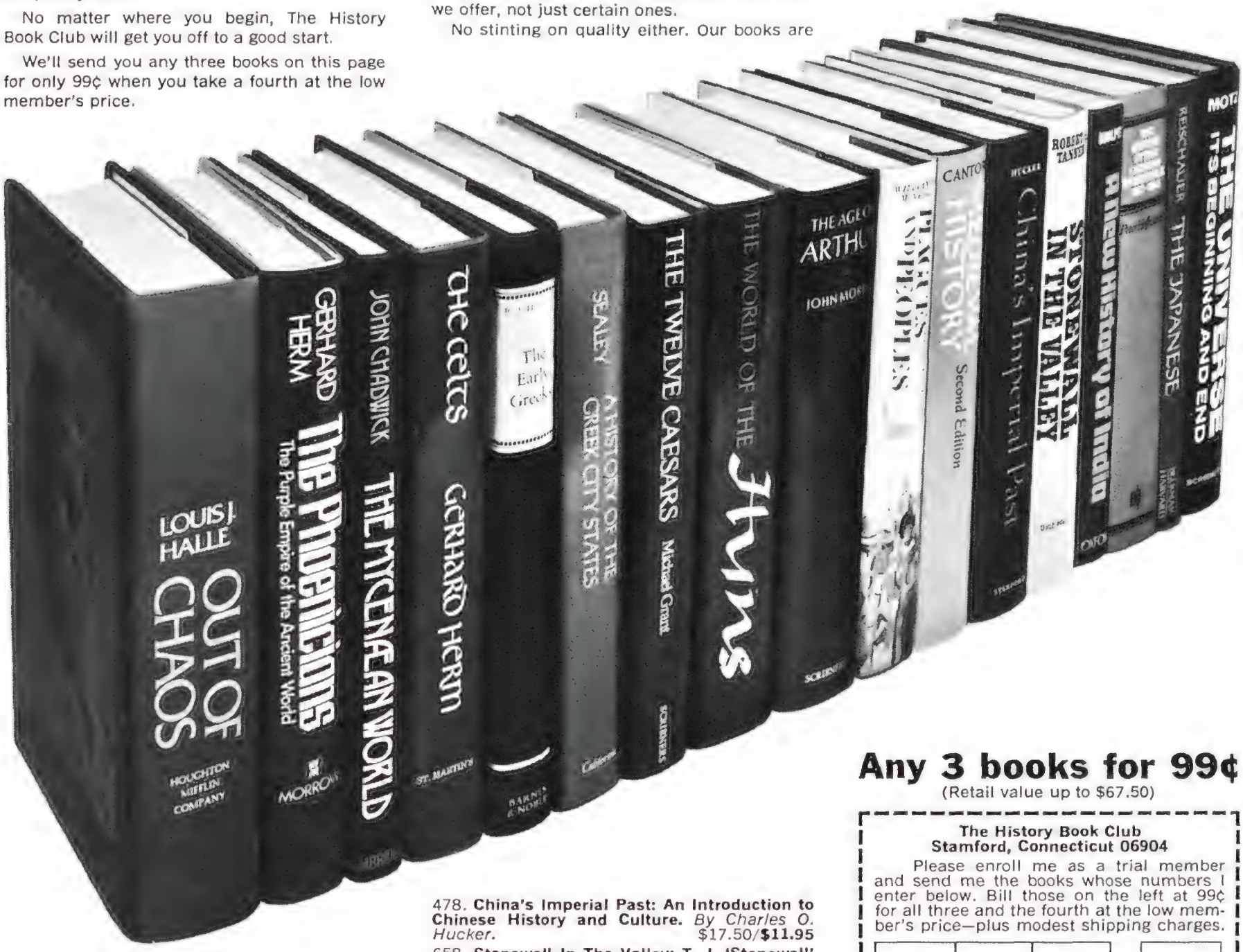
No matter where you begin, The History Book Club will get you off to a good start.

We'll send you any three books on this page for only 99¢ when you take a fourth at the low member's price.

If you're not delighted, just return the books (we'll pay the postage). Or keep them and simply take four more new books during the coming year, from some 175 offered each month. You get these at savings of $3, $4, $5 (and more) off bookstore prices. And this Club has a Bonus Plan that lets you pick *any* book we offer, not just certain ones.

No stinting on quality either. Our books are always physically the equal of the original publishers' editions.

The History Book Club began 31 years ago as a service to readers of history and world affairs. You can begin at the beginning or anywhere you like, by mailing our coupon today.




First price is publisher's list.
**Boldface** shows member's price.

558. **Out of Chaos.** *By Louis J. Halle.* A grand sweep of history—of nature and the universe, of man, his science, art and civilization. $20.00/**$12.95**

431. **The Phoenicians.** *By Gerhard Herm.* $8.95/**$7.50**

606. **The Mycenaean World.** *By John Chadwick.* $17.95/**$11.95**

546. **The Celts.** *By Gerhard Herm.* A 2000-year epic study of a fierce people. $12.50/**$8.50**

550. **The Early Greeks.** *By R. J. Hopper.* The emergence of Greek civilization. $25.00/**$13.00**

514. **A History of the Greek City States 700-338 B.C.** *By Raphael Sealey.* $15.00/**$9.95**

464. **The Twelve Caesars.** *By Michael Grant.* From Julius in 49 B.C. through Domitian in 96 A.D. $12.50/**$8.75**

346. **The World of the Huns: Studies in Their History and Culture.** *By O. J. Maenchen-Helfen.* $20.00/**$11.50**

274. **The Age of Arthur.** *By John Morris.* British history from 350-650 A.D. $17.50/**$11.95**

520. **Plagues and Peoples.** *By William H. McNeill.* The effect of diseases on the development of mankind. $10.00/**$7.75**

163. **Medieval History: The Life and Death of a Civilization.** *By Norman F. Cantor.* $11.95/**$8.95**

478. **China's Imperial Past: An Introduction to Chinese History and Culture.** *By Charles O. Hucker.* $17.50/**$11.95**

658. **Stonewall In The Valley: T. J. 'Stonewall' Jackson's Shenandoah Valley Campaign, Spring 1862.** *By Robert G. Tanner.* $10.00/**$7.95**

556. **A New History of India.** *By Stanley Wolpert.* The cultural, political, and socio-economic forces that have shaped India. $15.95/**$9.95**

508. **The History of the German Resistance, 1933-45.** *By Peter Hoffmann.* $19.95/**$12.95**

549. **The Japanese.** *By Edwin O. Reischauer.* An engrossing portrait of the background, culture, and politics of contemporary Japan. $15.00/**$9.95**

517. **The Universe: Its Beginning and End.** *By Lloyd Motz.* $14.95/**$9.95**

157. **A History of the Vikings.** *By Gwyn Jones.* From prehistory to 1066 A.D. $15.00/**$9.95**

414. **Russia Under the Old Regime.** *By Richard Pipes.* $17.50/**$10.95**

545. **Shakespeare's English Kings: History, Chronicle, and Drama.** *By Peter Saccio.* $13.95/**$8.95**

647. **The Norman Fate 1100-1154.** *By David C. Douglas.* $22.50/**$11.50**

665. **The Hittites: And Their Contemporaries in Asia Minor.** *By J. G. Macqueen.* $18.00/**$11.00**

524. **The Long Year A.D. 69.** *By Kenneth Wellesley.* The history of a momentous year in the Roman Empire. $16.50/**$10.50**

161. **A History of American Law.** *By Lawrence M. Friedman.* $17.50/**$10.95**

## Any 3 books for 99¢

(Retail value up to $67.50)

**The History Book Club**
**Stamford, Connecticut 06904**

Please enroll me as a trial member and send me the books whose numbers I enter below. Bill those on the left at 99¢ for all three and the fourth at the low member's price—plus modest shipping charges.

| | | | |
|---|---|---|---|
| | | | |

I may return the books within three weeks at your expense and owe nothing. Or I will take four more selections within a year *(not counting my introductory books)*, always at reduced member's prices plus shipping. Thereafter, I may resign at any time. ST-31S

Print Name _____

Address _____

City _____

State _____ Zip _____

A note on how the Club works: Every four weeks, you receive our *Review* and a dated reply card. If you want the Editors' Choice, do nothing: the book will come automatically. To order a different book or no book, return the card by specified date. You will have at least 10 days to make your choice—but if you get an unwanted book because of late mail, we guarantee return postage.

*In Canada:* Mail to The History Book Club, 16 Overlea Blvd., Toronto M4H 1A6, Ontario

BB77D

A Henry Ford Museum Reproduction

Block-Front
Circa 1760-1780
Chippendale

Ready to
Assemble and Finish
18th Century Furniture

One of 24 Bartley classics, in hand crafted solid mahogany, oak or cherry. Totally authentic in design and beautifully constructed. Each kit is easily assembled and finished in your own home without tools. All pieces also offered completely assembled and hand finished. A $5.00 coupon included with catalogue.

Please send me your illustrated catalogue of 18th century antique furniture reproductions available in kit form or hand finished. I am enclosing $1.00 to cover postage and handling.

Name _____

Address _____

City/State/Zip _____

The Bartley Collection, Ltd.

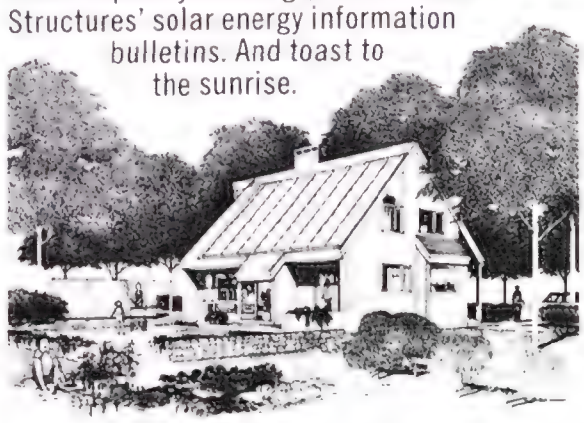
747 Oakwood Ave., Dept. S36 Lake Forest, Ill. 60045

Free energy
for the next 5
billion years.

Acorn's solar power. Following several years of testing and monitoring our solar heating system on an Acorn house, it's ready for your home. The components will adapt to any home with a forced air heating system ducted for air conditioning, and a south-facing roof of about 45°.

If you're planning to build, warm up to our 1950 and 2300 square foot Solar Cape designs. They combine attractive details and energy efficiency within the flexible and cost controlled Acorn building system.

Get all the information on the tax-free income derived from solar power and Acorn's Solar Capes by sending $1.00 for Acorn Structures' solar energy information bulletins. And toast to the sunrise.

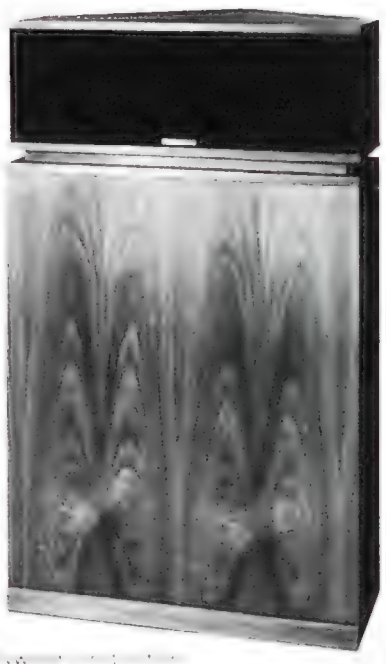


ACORN STRUCTURES, INC.
Dept. F-74 P.O. Box 250, Concord, MA 01742 (617) 369-4111

klipschorn® loudspeakers

If You Don't Like What Comes Out
You Wouldn't Like What Went In

The KLIPSCHORN was designed for only one thing — the re-production of original sound. True, no loudspeaker will ever do that exactly, but the KLIPSCHORN offers the nearest approach. Its three balanced horns, full use of room corners and Klipsch testing give the Klipschorn its full range, honest flat response and almost non-existent distortion. Each one is individually tested under the supervision of the inventor, Paul W. Klipsch. Write for information on all Klipsch loudpeakers.



klipsch
P.O. Box 688 SM6 Hope, Arkansas 71801

trip to Africa in 1971. The photographs missed one part of the story familiar in Africa—the women sitting on blankets in front of the walls of their houses displaying endless and inexpensive beaded items for the tourist trade.
*Russell J. Conn*
Boonton, New Jersey

## *Panama Canal*

Dear Sir: In your book review, *The Path Between the Seas: The Creation of the Panama Canal,* you credited Walter Reed with the "vital discovery that yellow fever is transmitted by mosquito." Didn't you ever hear of a Dr. Carlos J. Finlay at the International Sanitary Conference in Washington (1881) and the Academy of Sciences of Havana the same year?
*Filomeno J. Jimenez*
Miami
*It is true that Finlay presented his theory on the role of the mosquito* (Aëdes aegypti) *to both conferences, but he did not gain the recognition of the scientific world. Instead of "discover" we should have used the word "confirmed," which is what Reed did in 1901.* Ed.

## *Around the Mall and beyond*

Dear Sir: Although Edwards Park did not mention my grandfather, Gerald Best, I was very happy to know that his donation of his cherished Baldwin locomotive, *Olomana,* to the Smithsonian is being treated with such consideration.
*David Norton*
Las Vegas

Dear Sir: While reading your article I consulted my Hawaiian dictionary to find the meanings of the little locomotive's former name, *Puaalii,* and its present name, *Olomana.* I found that *pua* means blossom, flower, arrow and *alii* refers to the Hawaiian nobility. *Ola* is defined as life, health and *mana* as authority, power.

If I am ever in Washington, I will be glad to say them for Mr. Park and call the wanderer from our islands by name.
*Mrs. Peggy Priest*
Kaneohe, Hawaii
*According to Smithsonian's curator of the Division of Transportation, there are about six different definitions for* Olomana, *with no agreement on which one is correct.* Olomana *was named for an extinct volcano on Oahu.* Ed.

SOP
Fine Champagne
COURVOISIER
The Brandy of Napoleon
COGNAC
Produced and Bottled by
Courvoisier, Jarnac, France
COURVOISIER
Fine Champagne
COGNAC
IMPORTED BY W. A. TAYLOR & CO., MIAMI, FLORIDA, 80 PROOF, SOLE DISTRIBUTORS FOR THE U.S.A. ©1977

# "They just don't like they used to."

We build them better.

Take safety. Underneath the hood you'll find a safety feature you wouldn't dream of finding in most cars:

Holes.

They're specially designed using a computer, so the front end will help absorb energy in the event of a collision.

We also developed such things as an "independent stabilizer rear axle," which increases the stability of the car on rough roads.

And for our deluxe Rabbit, we developed special seat belts that actually put themselves on when you close the door.

Hardly a detail escaped our attention. Even the ignition key is padded for safety.

What about room? It's probably not the first thing you think about when you say "VW."

Yet today, Volkswagens actually have more combined interior room and trunk space than most other cars in their class.

Rabbits are so roomy they're being used as taxicabs in Lexington, Kentucky.

In fact, Rabbits have more interior room than 25 other cars you could buy. And more trunk space than a Cadillac Seville.

They're also surprisingly quick, with acceleration from 0 to 50 mph faster than a Triumph Spitfire.

Which brings us to another subject: performance.

Our Scirocco can take you from 0 to 50 in an amazing 7.5 seconds. And last year it was the Trans Am Champion in the under-2-liter class.

What's more, our newest Volkswagens are among the few cars in the world that

Rabbit

©VOLKSWAGEN OF AMERICA, INC.

# build Volkswagens

combine front-wheel drive (for improved tracking), fuel injection (for smooth acceleration), an overhead cam engine (for sportier performance), front disc brakes (for controlled stopping), and rack-and-pinion steering (for incredible response).

Do we still sound like the VW you remember?

Well then, take a look at our station wagon.

We never made anything like our Dasher wagon before. With more cargo room than any other wagon in its class. With a plush interior and carpeting all around.

And in our beautifully appointed 2-door or 4-door sedans, Dasher has more room than most American cars in its class.

Yet, with all the changes we've made, some things always remain the same.

We still employ 13,500 inspectors to insure the quality of every car we make.

And much of our work is still done by hand.

Like the paint. It's hand sprayed, over and over. It's hand sanded and hand cleaned. It's even checked by people wearing special mittens. And before it's finished it's put through 29 individual steps of preparation.

There's also that familiar "jingle" you get putting money in the bank. Because all three Volkswagens get 24 MPG in the city. Rabbit and Scirocco get 37 MPG on the highway, Dasher gets 36. (EPA estimates with standard transmission. Actual mileage depends on how and where you drive, optional equipment and the car's condition.)

Volkswagens aren't sounding like Volkswagens of the past.

They're sounding more like cars of the future.

Scirocco

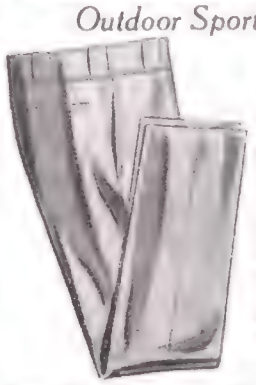
Dasher

Volkswagen

Economy without sacrifice

L.L.Bean tm

*Outdoor Sporting Specialties*



**Chino Pants**

You get real wearing pleasure from our strong and soft chino twill trousers. Two-ply double twisted yarns of polyester and combed cotton. Permanent crease. Absolutely washable with no ironing required. Neat looking for sports or work. Color: Tan. Men's even waist sizes only.

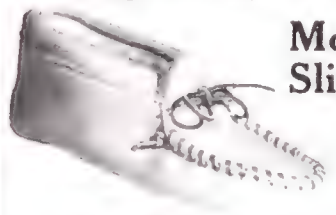
Sizes 30 to 38. Inseams 29", 31" and 33".
Price, $9.75 ppd.
Sizes 40, 42 and 44. Inseams 29" and 31".
Price, $9.75 ppd.
Sizes 46, 48 and 50. Inseams 28" and 30".
Price, $11.00 ppd.

**Lined Chinos**

Same as above but fully lined with our famous Chamois Cloth. A thickly napped, soft and comfortably warm 100% cotton flannel.
Sizes 30 to 44. Inseams 29", 31" and 33".
Price, $19.25 ppd.
Sizes 46, 48 and 50. Inseams 28", 30" and 32".
Price, $21.50 ppd.

**Suede Musette Bag**

Made of strong and supple full grain steerhide with the rough side out. Rich, sueded finish. Adjustable matching suede shoulder straps, leather trim and brass hardware. Will contain camera and lenses, shooting or fishing accessories, personal gear. For men and women. Color: Russet Brown Suede. Two sizes: Regular Musette Bag, 11" wide x 9" high x 4½" deep. Priced, $23.00 ppd. Large Musette Bag, 13" wide x 11" high x 4½" deep. Priced, $29.00 ppd.



**Moosehide Slippers**

**For Men and Women**

Genuine moosehide leather slippers. Moosehide is exceptionally thick, yet very soft and supple. Has a rich full grained finish and is long wearing.
Comfortable, foot-conforming moccasin construction with a hand-laced toe piece. Can be snugly adjusted around foot with another lacing stitched in the collar. Lacings are rawhide. Color: Moosehide tan. Ladies' whole sizes 5 to 10. Men's whole sizes 7 to 13.
Lined ankle model. Lined with warm and comfortable acrylic pile. Ladies' model, $13.00 ppd. Men's model, $14.50 ppd.
Unlined low-cut model. Full leather innersole backed with a thick foam cushion for extra comfort. Ladies' model, $11.00 ppd. Men's model, $12.50 ppd.

☐ Please send FREE 128-page Fall 1977 Catalog.
Please Ship Postpaid

_____Chino Pants, size_____ inseam_____,
@ $_____

_____Lined Chino Pants, size_____ inseam_____,
@ $_____

_____Musette Bags, Regular Size @ $23.00

_____Musette Bags, Large Size @ $29.00

_____Ladies' Lined Ankle Moosehide Slippers
@ $13.00 Size_____

_____Men's Lined Ankle Moosehide Slippers
@ $14.50 Size_____

_____Ladies' Unlined Moosehide Slippers
@ $11.00 Size_____

_____Men's Unlined Moosehide Slippers
@ $12.50 Size_____

☐ Check Enclosed ☐ Master Charge
☐ BankAmericard ☐ American Express

_____ _____
Card Number Expiration Date

Name _____
Address _____
City _____
State _____ Zip _____

**L.L. Bean, Inc.**
**1061 Casco St., Freeport, Maine 04033**

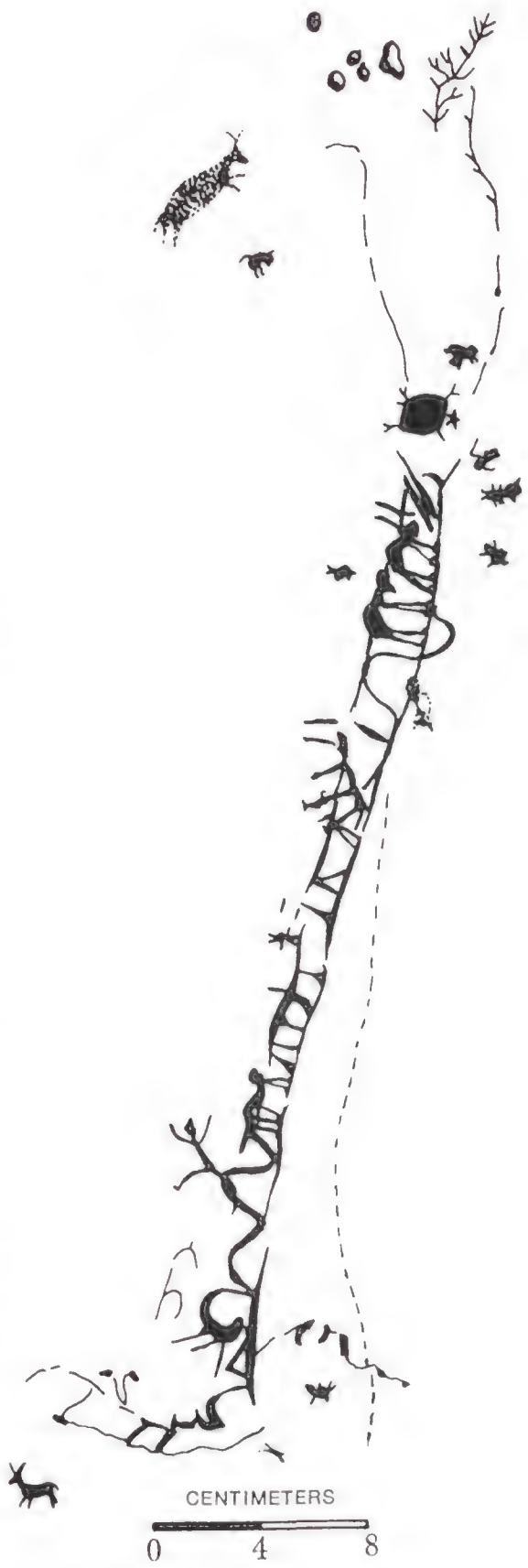

# *Phenomena, comment and notes*

*Energy from the oceans and rock art, measuring the crunch in potato chips and exploiting our selfishness*

Marketing tests and opinion surveys can be depressing to true believers: the public responds slowly, if at all, to the obvious. Take the matter of automobiles. It became obvious that some cars were unsafe at any speed some time ago, yet market research showed that most car drivers couldn't care less. Air pollution was a big deal in the public mind at the beginning of this decade but, according to *Society* magazine (Vol. 14, No. 5), not a big enough deal to make any but the easily commitable younger adult Americans worry much about their chromium-and-steel monsters. (Even here, *Society*, using the dispassionate modes of the social scientist, finds reason for cynicism: young adults can't normally afford big cars.)

The same applies to the aftermath of the energy crisis as perceived when the Arabs shut off the oil spigot. Some of our idealistic youth opted for fuel-efficient, smaller cars; many others sought out the comfort of the air-conditioned gas guzzlers.

Why then are there so many small cars on the road—as well as big cars? It turns out that it is a matter of completing the trend to individualism, not an altruistic belief in whatever the current cause may be perceived to be. In brief, most families still have a big car. Most families also have another one or two cars, small ones, so that no one is ever, even for an instant, denied a personal instrument by which to exercise the right of mobility. It's either a cause (or symptom) of the much-publicized fragmentation of the American family, *Society* suggests, not a recognition of the limits to growth. All this suggests a dark strategy for environmentalists and others with a cause: appeal not to reason but reason out how your appeal can serve the nonbelievers.




Honey gathering in prehistoric Spain

*Europe's first Mesolithic ladder*

Belgian scientists have just discovered the piece of Spanish rock art reproduced above from *Nature* (Vol. 268, No. 5617).

WEDGWOOD
PALE BLUE AND WHITE JASPERWARE
CUPID PLATE — 6½"
Original figures modelled in 1778
by William Hackwood,
Commissioned by
The Wedgwood Collectors Society
and issued in 1977 in a Limited Edition of 5,000 by
Josiah Wedgwood & Sons, Ltd., Barlaston, England

# Only 5,000 people in the world will ever own this plate.

It took 200 years to create this plate. The shape was designed by Josiah Wedgwood himself in the mid-18th Century. The cupid figures and the delicate swag border were modelled in 1778 by Wedgwood's foremost artist, William Hackwood. Now, for the first time, all these elements have been brought together in the Cupid Plate—a new Limited Edition from the Wedgwood Collectors Society.

**Not available in any shop**

You won't find the Cupid Plate in a shop or a catalogue or even a museum. That's because it's been created exclusively for members of the Wedgwood Collectors Society. When this worldwide edition of 5,000 is sold out, the molds will be destroyed and this Cupid Plate will never be produced again.

Chances are someday it will be extremely valuable. Today you'll find many Wedgwood Limited Editions in museums and private collections throughout the world.

In just 9 years, the Wedgwood Collectors Society has commissioned over 50 Limited Editions exclusively for its members, over half of which are completely sold out.

**Exclusive Collectors Society Editions**

These Wedgwood Collectors Society Special Editions include replicas of rare old Wedgwood pieces created from 18th and 19th Century molds. And original objects designed especially for the Society.

The Wedgwood Collectors Society is unique in the art world. *Its sole purpose is to offer you unique and original Wedgwood objects at realistic prices*. Some Special Editions are as limited as 250. Some are priced as modestly as $15. All are available only to Society members, and each edition bears the 24k gold Wedgwood Collectors Society backstamp.

**A special membership offer and a special free gift**

Annual membership in the Society costs you just $15. You'll receive a specially-designed 4½" Jasperware membership compotier plus a copy of the Society Registry of all Editions to date and a subscription to the Society Newsletter at no additional charge.

*For a limited time only*, the $15 annual Society membership fee will be included with the purchase of the Cupid Plate at no additional cost. You pay just $35 for the Cupid Plate and all membership privileges.

To take advantage of this special offer, please fill out and return the coupon on this page. Remember, the Cupid Plate is a Special Edition and supplies are limited. So return the coupon, together with your remittance, to the Wedgwood Collectors Society, 41 Madison Avenue, New York, New York 10010, as soon as possible.

**Wedgwood Collectors Society**
**41 Madison Avenue, Dept. SM**
**New York, N. Y. 10010**

Please check one:

☐ Enroll me as a Member of the Wedgwood Collectors Society. My first acquisition is the Cupid Plate for which I am enclosing $35. Send my Membership Plaque at no added cost, and waive my first year's $15 Membership Fee.

☐ I do not wish to acquire the Cupid Plate at this time. However, enclosed is my payment of $15 for first year's Membership Fee. Please enroll me as a Member, and send my Membership plaque at no added cost.

Payment enclosed for $ _____

Or Charge: ☐ Bankamericard (Visa) ☐ Master Charge

Account # _____ Expiration Date _____

Signature _____

Name _____

Street _____

City _____ State _____ Zip _____

(Residents of New York City please add 8% for State and City Sales Tax. Other residents of New York State and residents of California, please add applicable State and Local taxes.)

Wedgwood is a U.S. registered trademark of Wedgwood Ltd.

# EGYPT ASWAN LUXOR CAIRO

## BY MAUPINTOUR

**MAUPINTOUR'S** care and management assures you see everything you should see, comfortably. Join us for this new travel adventure. 15 days.

**GOOD HOTELS** such as Aswan's new Oberoi, Luxor Winter Palace, and Mena House resort beside the Pyramids and Sphinx. Spectacular views.

**LEARN** the significance, historic, contemporary. People. Scenic marvels. Incredible antiquities, art treasures. See *Abu Simbel* raised from the Nile!

**WHAT YOU DREAM** Egypt should be begins every Thursday. Ask your Travel Agent for Maupintour's *Egypt/ Middle East* folder or send coupon.

Maupintour, 900 Massachusetts St., Lawrence, Ks. 66044. 913/843-1211.

*quality touring since 1951* **Maupintour**

*Ask about these Maupintour escorted holidays:*
☐ Africa ☐ Alps ☐ British Isles ☐ Colorado ☐ Asia ☐ Central America ☐ Egypt ☐ Europe ☐ France ☐ Greece ☐ Hawaii ☐ India ☐ Iran ☐ Italy ☐ Mexico ☐ Morocco ☐ North Africa ☐ Orient ☐ Portugal ☐ Scandinavia ☐ Spain ☐ S. America ☐ S. Pacific ☐ USSR/E. Europe

*name*

*address*

*city*

*state/zip* *SSN-EGP*

NEVER BEFORE—this dramatic combination of pure gold on silver. A miraculous bi-tone process* etches 24K gold into the beautiful relief of authentic 1884 silver dollars. Spectacular effect for a minimal price! Necklace $89. Clip $35. Set $124. Full refund if not delighted.
ORDER TOLL FREE 1-800-441-7666
Mail check or credit card no. and exp. date to:
*Bi-toned silver dollars, by Jimmy Chin, are styled and sold exclusively by CARTWHEELS. These limited heirlooms are individually numbered and certified.
CARTWHEELS, INC.
2500 Grubb Road
Wilmington, Del. 19810


Deriving from Mesolithic times (8000-2000 B.C.), it was discovered in the Levantine rock sites of the Barranco de la Valltorta in eastern Spain, and it is the fourth known depiction there of honey gathering. It is special to history because it shows a remarkable ladder, obviously made of ropes of some sort securely knotted to regularly fashioned sticks for steps. (Such ladders are seen in rock art in southern Africa but never before seen in Europe.) It seems special to the nonspecialist in such matters simply because it is such a cheerful telling of a tale—though the tale is obscure: why are two men near the bottom leaving the ladder so precipitously? What is the goat (?) doing up there? We'll never know.

*Superstraw*

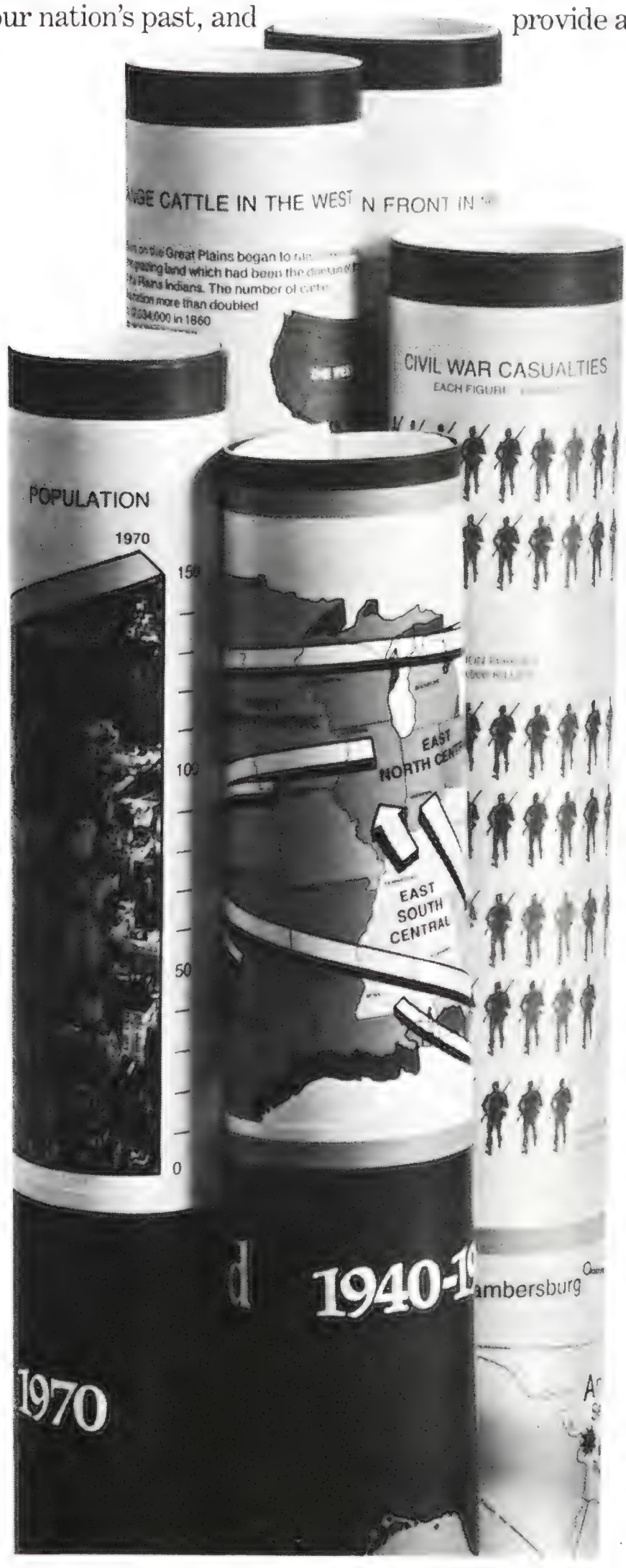
Apparently, the horse to watch in the race to make significant use of solar sources is called OTEC (ocean thermal energy conversion) which exploits the difference between cold deep water and warm surface water to run a heat engine. It's a neat, continuous cycle, says *Environmental Science and Technology* (Vol. 11, No. 7), wherein the warm water vaporizes a fluid, such as ammonia, which drives a turbine and is then condensed into fluid again by the cold water.

Anchored in the Gulf of Mexico, OTEC rigs could produce a steady supply of high-voltage electricity to a ravening market in our Sun Belt. They would have to be submerged to avoid hurricane damage. Another promising area is between Tahiti and Hawaii, the latter being mostly dependent on imported oil for its electrical output. A problem emerges: if New York's Consolidated Edison can't protect its transmission system from lightning, heaven knows how reliable transmission would be from the ocean depths.

Yet another OTEC scheme calls for huge reinforced concrete barges equipped with banks of turbines and converters. Each barge would sit on top of a mammoth cold-water intake pipe, like a soda straw, and would rove about, "grazing" energy from optimal thermal gradients found by infrared-detecting satellites.

How to ship the energy home from a mobile plant? You don't necessarily. It is possible to make ammonia ($NH_3$) from the natural resources of the ocean by combining hydrogen from electrolyzed seawa-

**With a special kind of map** the world is made visual in a new way. Understood in a new dimension. Not only the physical features, but the movement of people and of ideas through time and space, even the growth and decay of an economy or a culture can all be expressed with clarity and detail. These American Studies maps and charts, developed by our school map and globe experts, diagram the changes brought about by people and events in our nation's past, and provide an aid to teachers of the social sciences.




**Rand McNally**
***a teacher's world***

# ... the ideal way to buy your presents from The Metropolitan Museum

Every three months—four times a year—the Museum will announce by mail remarkable new objects—exact copies of Museum originals: sculpture, decorative art, tableware, and ornaments.

The variety will be extraordinary: ancient jewelry in gold and silver; Oriental and European porcelain; early American glass in crystal and rare colors; bronze from Egypt, Greece, China, and the medieval world; silver, pewter, brass, and pottery from Colonial America.

These copies, often produced by the same techniques used for the originals, are made by artist-craftsmen working under the Museum's direct supervision. The care taken in production frequently limits the quantity, and the majority of reproductions can be bought only by mail or at the Museum. (Above: Hippopotamus, bright blue faience decorated with lotus flowers. Length 8", $19.75 plus $1.25 shipping.)

To receive all of the advance announcements to be issued during the next year, send the coupon below with one dollar to cover mailing.

You will receive immediately the 116-page Christmas Catalogue. The brilliant array of new presents includes an Egyptian jasmine flower necklace; a golden Buddha; a medieval silver bowl; stained glass; jade and bronze horses from ancient China; an 18th-century porcelain dinner service; new needlework kits from the *Unicorn Tapestries;* snowflakes, stars, and bells in gold and silver; and an unparalleled selection of Christmas cards. An additional 24-page full-color catalogue introduces the Museum's Costume Institute "originals"—line-for-line recreations of designs from the past which bring unusual flair to contemporary fashion. Among these is the first copy ever made of the fabulous Imperial Russian "100,000 gold ruble" shawl. This outstanding reproduction in fine wool challis, with its bold stripes and intricate floral patterns retains the more than 50 colors of the original. It measures 21" x 96"; the price is $35.00.

THE METROPOLITAN MUSEUM OF ART

255 Gracie Station, New York 10028 IDJ7

Please send me all advance catalogues of new objects to be issued by the Museum during the next year. $1.00 to cover mailing is enclosed.

NAME _____

ADDRESS _____

_____ ZIP _____


ter and nitrogen from liquefied air. And what does that have to do with decreasing demand on petroleum? By 1985 some eight percent of the natural gas in the lower 48 states will be used to make ammonia, most of which is then used to make fertilizer. Proponents of the OTEC grazing plant are confident that after a couple of these plants are built and tested (the first prototype will be launched, if that is the word, in 1980), subsequent ones will not need government subsidy.

*A little grease, please*

What would you do if the bushings of your car developed a painful squeak and groan? You would go to a service station and have a lube job. The joint between the human hip and leg is mechanically analogous but sufferers of arthritis can't simply repair to the nearest medical service station for similar treatment. Yet doctors from the Soviet Union suggest that the analogy is not just metaphorical.

According to *Medical World News* (Vol. 18, Nov. 15), workers at Lithuania's Institute of Experimental and Clinical Medicine have used intra-articular injections of artificial synovial fluid, and "clinically improved 50 patients with knee, hip, or shoulder osteoarthritis." A Japanese doctor concurs: injections of hyaluronic acid, the main component of synovial fluid, proved to be a better treatment than corticosteroids. U.S. medical people are not optimistic. The idea shows "promise" but it is, after all, in "the very experimental stage." To which one can only reply: start experimenting.

*The march of science*

You will be relieved to learn that the artillery of science has been trained upon yet another habit which Americans indulge to excess: eating—specifically, the delights of eating crunchy, crispy things. Somehow, while advertisers extol the crispiness of this potato chip or the crunchiness of that plastic-wrapped vegetable, scientists have not pinned down with any precision the meaning of these alluring words. A cognitive system is, at last, at hand owing to the work of a food scientist at the University of Minnesota.

It all has to do with noise, reports *Chemistry* (Vol. 50, No. 6) a bit breathlessly. Through exhaustive soundspectographic analysis of green peppers, cookies,

Energy for a strong America.

# Burning high sulfur coal cleanly: it's a hot subject at Exxon.

The fiery column next to Exxon research engineer Rene Bertrand holds the kind of coal that could add pollution to the air we breathe. But the coal here is being burned in a new, cleaner way called "fluidized bed combustion." In this process, crushed coal is burned in a bed of limestone granules while a stream of air is injected into the mixture. The air causes the powdered solids to behave like fluids so they can be moved through the process. Most of the sulfur gases that are released as the coal is burned react with the limestone and do not escape into the atmosphere. Later the sulfur can be recovered for use as a chemical raw material.

Exxon's research affiliate built and is operating a pilot plant for the U.S. Government to demonstrate the fluidized bed combustion process. Exxon is one of several firms involved in a national program aimed at developing this cleaner way to burn high sulfur coal.

We expect the process will someday help electric utilities and industrial firms make greater use of America's huge reserves of high sulfur coal.

Exxon pioneered the development of fluidized bed technology for refining gasoline and other fuels. Applying it in this new way to help satisfy our nation's energy needs is a good example of how experience in one form of energy can pay off in another.

**3 BIG REASONS**
**for joining Europe's Biggest Travel Club right here in America**

1. 21 exciting adventure trips: Backpacking in Nepal to Everest Base Camp, Red Sea diving, Greek Islands sailing, a *different* Kenya safari, plus New Zealand, Egypt, Morocco, Borneo, Sahara, Yemen, Thailand and more. Special club rates. Small groups.

2. You've heard about the English pound. Now save up to 40% on worldwide flights routed via London

3. Get to Europe via a gigantic Program of ABC charters, such as New York-London from $279 round trip

**Plus** your *free* subscription to *Expedition* Magazine and your own free copy (worth $9.50) of *Off The Beaten Track*, the independent traveler's ultimate sourcebook

**You can see why WEXAS International has 17,000 members in 83 countries.**

To WEXAS International Inc. Suite 354
420 Lexington Avenue, New York, NY 10017

Gentlemen, I am interested in receiving, without obligation, your *free* catalogues. I enclose $1.00 to cover postage and handling SMA

Name. Mr/Ms

Address

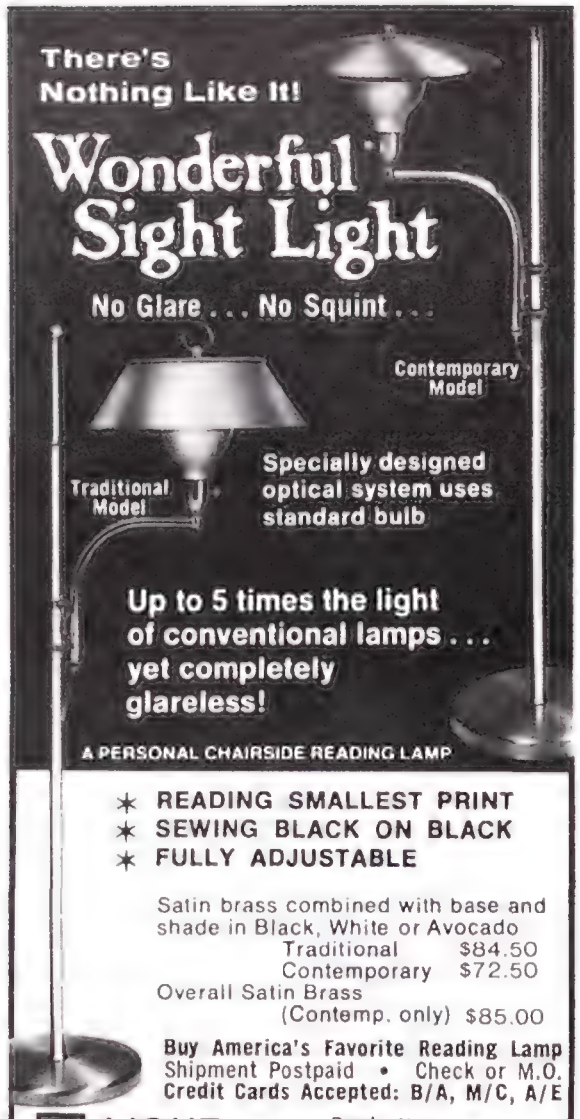
City..... State..... Zip.....



There's Nothing Like It!

**Wonderful Sight Light**

No Glare . . . No Squint . . .




Specially designed optical system uses standard bulb

Up to 5 times the light of conventional lamps . . . yet completely glareless!

A PERSONAL CHAIRSIDE READING LAMP

- ✶ READING SMALLEST PRINT
- ✶ SEWING BLACK ON BLACK
- ✶ FULLY ADJUSTABLE

Satin brass combined with base and shade in Black, White or Avocado
Traditional $84.50
Contemporary $72.50
Overall Satin Brass
(Contemp. only) $85.00

**Buy America's Favorite Reading Lamp**
Shipment Postpaid • Check or M.O.
**Credit Cards Accepted: B/A, M/C, A/E**

LIGHT-CRAFTERS
Dept. N10
36 Sherwood Place
Greenwich, Conn. 06830

*We sell only by mail . but write for list of nearest stores.*

***Fair Isle Sweaters from BROWN'S***

Fair Isle Sweaters have made a strong comeback and we have some of the best designs and colours in the market today. Traditional Scottish styles, handframed in Hong Kong from pure Scottish yarns. Gorse Green, Smoke Blue, Cinnamon, White, Sky Blue, Natural and Watermelon. Sizes 34, 36, 38 and 40. Fair Isle Cardigan Style #10 $36. Fair Isle Pullover Style #11 $34. Add $1.25 for postage and insurance. Telephone orders accepted (603) 237-8311.

Check here ☐ if you would like our free colourful Fall-Winter Catalogue.
NAME .....
ADDRESS .....
.....
STATE ..... ZIP .....

Mail Order Form
Fair Isle Cardigan #10 ☐
Size ..... Colour .....
Fair Isle Pullover #11 ☐
Size ..... Colour .....
Enclosed is my Cheque ☐
Money Order ☐
Bank Americard ☐
American Express ☐
Master Charge ☐ Diners Club ☐
Card Number .....
Expiry Date .....

Fine British Products For Over 40 Years
**BROWN'S OF BERMUDA INC.**
**Colebrook, New Hampshire 03576**

SM1077


potato chips and so forth, three categories on the upper end of the noisy-crispy/quiet-not-crispy spectrum can be specified:

- Wet-crisp, when the living cells of celery or green peppers—filled with fluid and with pressure called *turgor*—explode expansively under the force of a tooth. The more turgor, the louder the crunch.
- Dry-crisp, as when the air-filled brittle cells of crackers bend and break and the "shattered fragments snap back to position, generating vibrations that build up into a sound pressure wave."
- Chip-crisp — for example, potato chips, only a few cells thick, are noisier (crispier) than you'd expect. Why? Aided by the curvature, they are repeatedly fractured, resulting in a multitude of sounds.

*In search of the heebie-jeebies*

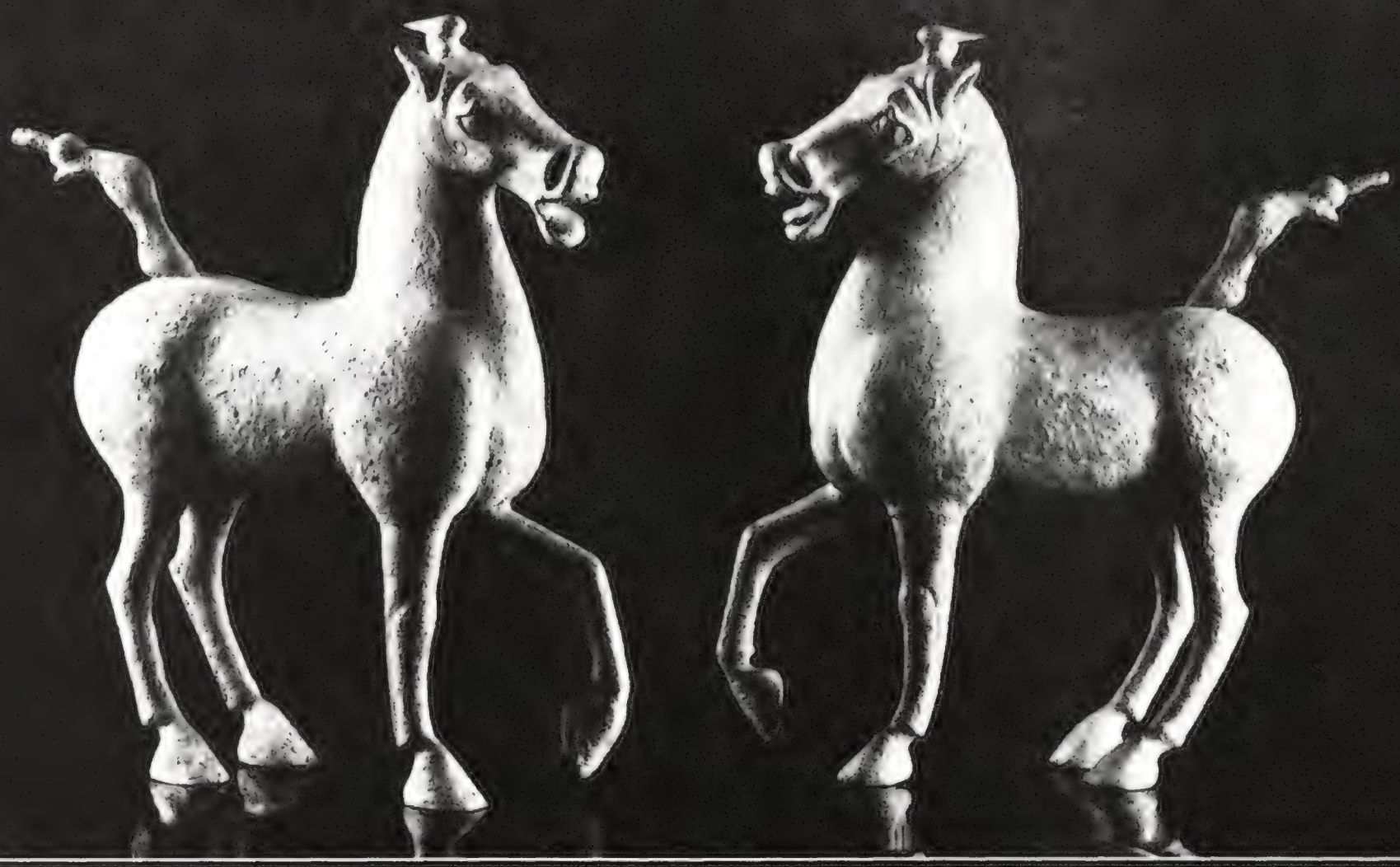
Yet another habit of the American is to scare himself half to death by consuming horror stories (in books or movies) based on the occult—as in *The Exorcist*—or on the animal world. The shining example in recent times is *Jaws*. Usually these efforts, in spite of skillful writing or spectacular cinematic effects, aren't ultimately convincing. Their progeny are even less so: anyone who knows anything about killer whales knows that *Orca* is a fraud. So one comes upon a book called *Nightwings* by Martin Gruz Smith (published by W. W. Norton this month) armed with skepticism, only to find oneself thoroughly spooked. *Nightwings* taps both the occult and the natural horror lines: each is exaggerated, to be sure, but plausibly. The occult arises from the story's setting, the land of the Hopis in the high deserts and mesas of northeastern Arizona where the ancient ancestors do indeed hold sway today for some. The nasty creature is the spookiest of all, the vampire bat—a sudden migration of a large, hungry colony of vampires north of the border. A worldly (but spookable) Hopi deputy and an obsessed but (for once) quite fully dimensioned scientist seek solutions as the entire Southwest falls prey to the scourge.

Given the acceptance of a few unlikely assumptions (forgiving the author for putting Sonoran flora in northern Arizona and for committing a few ethnographic bloopers), it is terribly convincing. Convincing? It will make the flesh on your back lurch and give you at least a full week of the willies.

—James K. Page jr.

# THE CELESTIAL HORSES OF CHINA

## A Limited Edition by Alva Museum Replicas



More than two thousand years ago, the nobleman, Chang Ch'ien, returned to China from east of Samarkand with tales of tall "blood-sweating horses with hooves so hard they cleft the stones as they galloped swift as the wind... celestial horses!"

Their introduction during the following century so fired the minds of the Chinese and their artists that they became a symbol of wealth and privilege, and were ceremonially interred, as bronze sculptures, with the rich and powerful of the Eastern Han Dynasty.

Alva Museum Replicas, authorized producer of reproductions for more than a hundred renowned museums, has created this special limited edition of such bronzes from the Wu-wei excavation. Months of intensive research went into duplication of every possible detail and nuance of the originals, recreating their look, spirit, even the patina of time on the bonded bronze casts. This is a unique opportunity to own what will unquestionably become a treasure in our own time.

The horses are an impressive eleven inches in length (They are nine and a quarter inches high.) A heavy Plexiglas base is provided for each.

The U.S. edition of 975 pairs is individually numbered and orders will be filled in numerical sequence by earlies postmark. After completion of the edition, all molds wil be destroyed.

We seriously invite your consideration.

Edition size: 975 pairs
Price: $700 as a pair - Order # ST-1002
$375 each - Order # ST-1003
Shipped postpaid - Subject to prior sale.

Send $1 for full-color MUSEUM COLLECTIONS Catalog... Five thousand years of sculpture and jewelry replicas presented as elegant and tasteful gift suggestions

TO ORDER BY MAIL Send to: MUSEUM COLLECTIONS (Dept. S), 140 Greenwich Ave., Greenwich, Conn. 06830

| Qty. | Order# | Unit Price | Total |
|---|---|---|---|
| | ST-1002 | $700 | |
| | ST-1003 | $375 | |

N.Y., Conn. residents add sales tax: ____

Total: ____

Please charge my ☐ BankAmericard ☐ Master Charge* ☐ American Express
Card No:
Card Exp. Date: ____ *Interbank No.

Signature ____

☐ I enclose $1 for Museum Collections Catalog.
☐ I enclose my check or Money Order (no C.O.D.)

Name ____

Address ____

City ____ State ____ Zip ____

Allow 3 to 4 weeks for delivery. Satisfaction guaranteed, or you may return within three weeks for replacement or full refund.

# THE WORLD'S GREAT ART FROM THE WORLD'S GREAT MUSEUMS

## in 24 karat gold on sterling silver

MICHELANGELO / THE PIETA
St. Peter's / The Vatican

REMBRANDT / SELF-PORTRAIT IN OLD AGE
The National Gallery, London

VENUS DE MILO
The Louvre, Paris

TITIAN / THE REPENTENT MAGDALENE
The Hermitage Museum, Leningrad

# *An extraordinary collection of one hundred beautifully sculptured art medals portraying the greatest masterpieces from the world's most famous museums.*

*This strictly limited Mint Edition is available by subscription only.*
*Limit: One set per subscriber.*
*Subscription deadline: October 31, 1977.*

*The Louvre* in Paris. *The Hermitage* in Leningrad. *The Rijksmuseum* in Amsterdam. *The Prado* in Madrid. *The Uffizi* in Florence. *The Royal Museum* in Brussels. *The National Gallery* in London. *The Egyptian Museum* in Cairo. *The Acropolis Museum* in Athens. *The Metropolitan* in New York . . .

These are the greatest museums in all the world. Each one the home of priceless art treasures that are acclaimed and admired as the finest masterpieces ever created—the crowning achievements of man's artistic genius.

And now, the greatest works of art from the world's great museums will be captured for all time in a unique and enduring form. One hundred works of power and perfection—masterpieces of every kind, from every era and every part of the world—captured forever in a magnificent new collection of finely sculptured art medals.

**Masterpieces—selected by a distinguished panel**

The works of art to be portrayed in this collection have been selected by an independent international panel of eminent scholars and art historians. And their choices are the result of careful and totally objective consideration—one hundred of the most significant and stirring works of art ever created. Timeless masterpieces of every kind, from every major period in the glorious history of art—*the very best* that the great museums have to offer . . .

Rembrandt's haunting *Self-Portrait in Old Age*, from London's National Gallery. Van Gogh's beautiful and serene still life, *Irises*, from The Metropolitan Museum of Art. The exotic *Flying Horse of Kansu*, sculptured over two thousand years ago and now displayed in Peking's Imperial Palace; Michelangelo's *Pietà*, from the Vatican collection. The divine *Venus de Milo* from The Louvre. Dürer's powerful woodcut *The Four Horsemen of the Apocalypse*, from the British Museum. And masterpieces by Leonardo da Vinci, Titian, Goya, Vermeer, Botticelli, Rubens, Raphael, Velazquez, Renoir, Rodin—the supreme masters of every age.

In all, 100 immortal works of beauty and power. Works that have profoundly shaped the history of art and inspired millions of people throughout the world. And *each* will be beautifully and sensitively interpreted in the medium of fine medallic art.

**Exquisite art medals of precious gold and silver**

These exquisite art medals will be meticulously crafted by the master sculptors and engravers of The Franklin Mint—renowned throughout the world for the beauty and fidelity of their medallic art. Thus, each of these medals will capture the very essence of the work portrayed.

Those who act promptly have the opportunity to acquire this beautiful Mint Edition in 24 karat gold electroplate on sterling silver. Furthermore, subscribers will be able to acquire this collection at the convenient and systematic rate of one medal per month. And the original issue price of $29.50 for each precious gold on sterling silver medal will be *guaranteed* for every medal in the series.

To possess these fine art medals is to own a collection of great meaning and lasting beauty. A treasury of fine art in precious metal, drawn from the fabulous art treasures of the world's most famous museums.

Such a collection will be a never-ending source of inspiration and cultural enrichment for the collector and his family. For as you study these magnificent medals, you and your loved ones will gain an ever deeper appreciation of the greatest artistic geniuses who ever lived—and their immortal masterpieces.

**Subscription deadline: October 31, 1977**

This exceptionally desirable Mint Edition of *The World's Great Art from the World's Great Museums* is being made available for a very limited time. To be accepted, the coupon at right must be mailed no later than October 31, 1977. Please note, however, that no subscriber may acquire more than one set in this strictly limited Mint Edition.

It is not necessary to send any payment at this time. Each of the medals will be billed to you, individually, prior to its shipment. But please be sure to mail your coupon by October 31st.


INTERNATIONAL PANEL OF ADVISERS

The Franklin Mint gratefully acknowledges the expert assistance of the following distinguished professors in helping to select the works honored in this collection.

Professor Umberto Baldini—University of Florence
Professor Raymond Bissell—University of Michigan
Professor James Breckenridge—Northwestern University
Professor André Chastel—College de France
Professor Frederick Hartt—University of Virginia
Professor Francis Haskell—Oxford University
Professor Ugo Procacci—University of Florence
Professor Rolf Sackenheim—Academy of Arts, Düsseldorf
Professor James Snyder—Bryn Mawr College

© 1977 FM


SUBSCRIPTION APPLICATION

## THE WORLD'S GREAT ART FROM THE WORLD'S GREAT MUSEUMS

*Must be postmarked by October 31, 1977.*
*Limit: One Mint Edition set per subscriber.*

The Franklin Mint
Franklin Center, Pennsylvania 19091

Please accept my subscription for a Mint Edition set of *The World's Great Art from the World's Great Museums*, consisting of 100 medals in 24 karat gold electroplate on sterling silver, to be issued to me at the rate of one per month.

I need send no payment now. I will be billed $29.50* for each medal in advance of shipment. A custom-designed hardwood collector's chest will be sent to me separately at no additional charge, and specially written reference material will accompany every medal.

**Plus my state sales tax.*

Signature_____
ALL ORDERS ARE SUBJECT TO ACCEPTANCE

Mr.
Mrs.
Miss_____
PLEASE PRINT CLEARLY

Address_____

City_____

State, Zip_____

THE FRANKLIN MINT IS THE WORLD'S LARGEST PRIVATE MINT. IT IS NOT AFFILIATED WITH THE U.S. MINT OR ANY OTHER GOVERNMENT AGENCY

She says I never give her flowers.

A diamond is forever.

To give you an idea of diamond values, the piece shown is available for about $1350.
Your jeweler can show you other fine diamond jewelry starting at about $200. De Beers Consolidated Mines, Ltd.

# *Around the Mall and beyond*

This column has frequently mentioned the music that echoes and resounds within these museum halls, and it has always been a temptation to say that the Smithsonian has no central, single concert hall. It has no building where you can go to listen to programs, where, indeed, you can buy a season ticket and have the same seats every Friday afternoon and get to know your neighbors. Or where you get to recognize the first violin and the harpist in the long black dress and the bald man amid the kettledrums, and where you shake your head critically when your familiar conductor has gone off to Nantucket for three weeks and left you at the mercy of some unknown genius from, say, Philadelphia.

Yet the Institution *does* have *almost* exactly such a place. In the Division of Musical Instruments at the Museum of History and Technology there is a pleasantly appointed auditorium with comfortable, red-upholstered seats and a small concert stage. It has broad windows at the rear which open on a grand view of the Washington Monument but have draw curtains so that you can rivet your attention on what's going on up front.

What's going on are regular concerts in which talented and often famous musicians play historic antique instruments, producing the sounds of two or three centuries ago. These demonstrate both the remarkable collection of this division and the skills of the restorers who bring pitiable old relics back to life. Working in the museum basement, chief conservator Scott Odell has been resuscitating an 18th-century harpsichord, whose lid is adorned with cherubs (below). This highly decorative instrument was created in

**The Schick Super II Classic with Pewter Pistol Grip Handle by International Silver**

For the holidays, birthdays, or anniversaries, here's the answer in a unique gift, superbly styled by International Silver. This is a man's razor, no doubt about it... from the rugged Pewter Pistol Grip to the silky smooth Schick shave. Every Schick Super II Classic comes complete with four Super II Teflon-coated twin blade adjustable cartridges, and is handsomely boxed for giving. At $12.95, merely the finest gift of the season. Order now for rapid delivery.

MAILED FIRST CLASS

**American Archives,** 141 Charles St., Meriden, CT 06450

**YES,** I want the remarkable Schick Super II Classic by International Silver. Rush me by First Class mail _____ Razors @ $12.95 ea. (incl. 95¢ postage and handling ea.) for a total of $_____. *Conn. residents add 7% state sales tax.*

☐ My check or money order is enclosed.

Name _____

Address _____

City _____ State _____ Zip _____

Please charge my credit card ☐ American Express ☐ Diners Club ☐ BankAmericard ☐ Master Charge

Account Number _____ Exp. date _____

Interbank Number (Master Charge Only) _____ Signature _____

For Rapid Charge Service call toll free at (800) 243-3755. Conn. residents call 235-6383. Phone today.

© INTERNATIONAL SILVER CO. 1977 SR-40

# SEE NORTH CAROLINA BEFORE YOU GET HERE.

One of three full-color books in the North Carolina travel package.

To see all the good things North Carolina has to offer, you need to do some looking ahead of time.

So you'll know where to go. How to find it. And what's there, once you do.

Send the coupon, for your free North Carolina travel package. And get the facts, not just another sales pitch.

After all, if you take a good look at North Carolina before you come, you're going to enjoy it a lot more while you're here.

Name

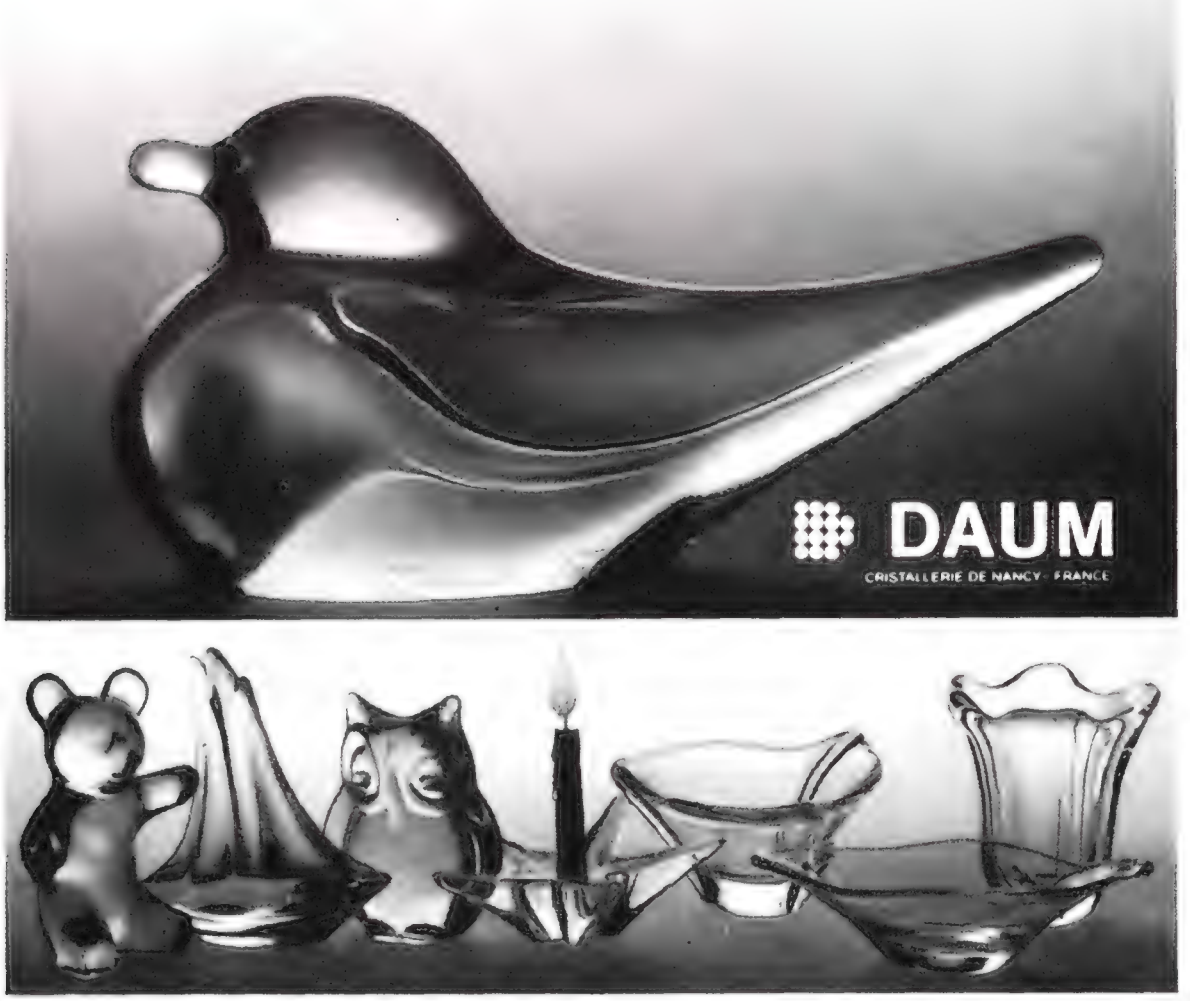
Address

City State Zip Code

NORTH CAROLINA TRAVEL PACKAGE
North Carolina Travel, Department 820, Raleigh, N.C. 27699



A Gift from Daum—A special collection of miniatures, with pricing to match, all signed, all handsomely gift boxed. Perhaps this is all you needed to become a devoteé of Daum—the premiere contemporary cristallerie of France, and the World. Send 50¢ for the complete collection catalogue and the name of your Daum dealer. D. STANLEY CORCORAN, 1051 Saw Mill River Rd., Yonkers, NY 10710.





Paris in 1770 by Jean Mari de De Ban.

De Ban's masterpiece was a pile of junk until Odell got it into his workroom along with an organized confusion of old keyboards and ancient clavichords with checked varnish and a couple of hurdy-gurdies. Soon it will be on that stage, under that splendid chandelier, making the sounds it was designed for.

Back in this magazine's fifth month of publication (August 1970), we ran a cover story describing the Smithsonian collection of playable instruments. Since then we have acquired many others and increased our public performances on them —the Smithsonian Chamber Players tour the country—so that almost any day the casual museum visitor can hear a musician in the concert hall trying out a viola d'amore, perhaps, or a one-keyed flute or baroque oboe or early-American fife.

We also have taken part in a somewhat publicized little adventure concerning the Couchet harpsichord, which was stolen from an estate in Blue Hill, Maine, sneaked across country in a U-Haul van and which finally turned up in San Francisco. Essayist E. B. White, who lives near Blue Hill, wrote of it in the *New Yorker* (February 24, 1975).

Anyway, Scott Odell went out to the Coast to identify what was doubtless the world's only hot harpsichord. The rightful owner gratefully lent the instrument to the Smithsonian for an extended period—which is the phrase we use when we're not really sure how long it is.

That illustrious Couchet joins 244 keyboard instruments in this collection. They consist, specifically, of pianos (including 19 grand pianos), plucked-string keyboards (harpsichords, virginals, spinets and clavicytheria), clavichords, organs and other miscellaneous items.

All these are only keyboard instruments, mind you. Robert Sheldon has been restoring so many wind instruments from the 19th century that the division is able to recruit a full Civil War brass band and play *Rally Round the Flag Boys,* for example, with all the same tweetles and oompahs that it had when played beside the Rappahannock in 1863.

Not only that. In March 1974 a group calling itself the "Smithsonian Social Orchestra and Quadrille Band" presented an "American Music and Ballroom Dance, 1840-1860" at the Renwick. There, in that elegant setting, dancers in period dress whirled through the schottisches, qua-

# ONLY PIONEER COULD INTRODUCE A QUARTZ PHASE LOCKED LOOP TURNTABLE AND CALL IT A BARGAIN.

Today, there's nothing more accurate than a quartz phase locked loop turntable.

It's the kind of turntable they use at radio stations and recording studios. Where people are more interested in getting a great sound than getting a great price.

Well, Pioneer has just introduced the same kind of quartz turntable. Except ours was designed for people who *do* care about price.

It's called the PL570.

And like the professional quartz turntables you'll find in all those radio stations and recording studios across the country, it features a direct-drive motor that's quieter than ordinary motors.

Plus an electronic strobe circuit that lets you adjust the PL570 far more accurately than conventional strobes.

And the same kind of quartz phase locked loop technology that automatically corrects the turntable speed to account for things like the weight of the record and even the amount of stylus pressure. So your records can always sound perfect, because they're always spinning perfectly.

But where the average quartz phase locked loop turntable offers you all this accuracy for around $800, our new PL570 does it for under $400.* Which, you'll have to agree, is quite a bargain. (And that's even before you find out that the PL570 is one of the few fully-automatic quartz-lock turntables available today at *any* price.)

Of course, if you're looking for something a little less sophisticated than our PL570, there's still no need to look any further than Pioneer.

In all, we make eight high quality turntables. And while they may not all offer the same kind of features as our PL570, you can bank on at least one thing.

They all feature the same kind of value.

High Fidelity Components

PIONEER®

WE BRING IT BACK ALIVE.

©1977 U.S. Pioneer Electronics, 85 Oxford Drive, Moonachie, New Jersey 07074

*The value shown in this ad is for informational purposes only. Actual resale prices will be set by the individual Pioneer dealer at his option.

A collectors Christmas
from the Hamilton Collection...

# The Christmas Bell in Fine Porcelain

Ring in the holiday season with this exquisite bell, delicately sculptured in fine art porcelain by Gorham. "Christmas Herald" is second in the series of beautiful porcelain Christmas bells offered each year exclusively by the Hamilton Mint. From the harmonious balance of its wings to the angel's graceful expression as she prepares to sound the horn's clarion call, "Christmas Herald" is the perfect way to ring in the New Year. Make it a part of your family's Yuletide celebrations this year, and in years to come. For the special people on your list, the porcelain bell makes a distinctive Christmas gift, at only $35.

**The Hamilton Collection**—Holiday Edition. Over 100 unusual collectibles to make this Christmas unforgettable. Porcelain, crystal, precious metals, antiquities and fine works of art. You'll receive the handsome color catalogue when you order the "Christmas Herald" porcelain bell. Or, write to us for the free catalogue only.

Dept. 118

THE HAMILTON COLLECTION
40 East University Drive
Arlington Heights, Ill. 60004

☐ Please send me____ of the "Christmas Herald" porcelain bells at $35 each (plus applicable sales tax) and a copy of your catalogue. I am enclosing my check or money order as payment in full.

☐ Please only send me a copy of your free catalogue.

Name_____

Address_____

City_____

State_____ Zip_____

Shaker Candle Sconce
KIT
$17.00

This reproduction of a pine candle sconce from a Shaker dwelling in Canterbury, New Hampshire was used in hallways and retiring rooms. It is complete with a pegboard, screw eyes and wall hangers. Also included is a simple tin candle stick. Shelf is 6" x 9"; height 18". Kit is $17.00. Add $2.00 for postage and handling.

*Mass. residents add 5% sales tax.*

**Send 50c for Color Catalog**
Over 50 kits illustrated. Plus exciting ideas on decorating and refinishing

Name_____

Address_____

City_____ State_____ Zip_____

Cohasset Colonials BY HAGERTY
367 Ship St., Cohasset, Mass. 02025

*The Philadelphia Museum of Art Catalogue for Armchair Shoppers*

Greeting cards $.15 to $.30 reproduced from art in the Museum collections

1978 Appointment Calendar
*Fun and Games and Sports of All Sorts*
$5.95 plus $.50 shipping charges

Reproductions of early 19th-century Pennsylvania German wooden toys, needlework kits, china, stained glass, aprons, and other distinctive gift items.

Send $.25 for full-color catalogue

*Dept. SM, Box 7858*
*Philadelphia, Pa. 19101*

drilles, waltzes and polkas of those two decades, and in some numbers the audience was invited to join in. James Weaver, who led the band as well as played the piano, bass drum and bells, and who is Associate Curator of the Division of Musical Instruments, tells me that it was an unforgettable evening.

I have the album of 19th-century music played by most of the same musicians with the same instruments. All of the numbers in the recording were on the Renwick program. And it makes very good listening. There is nothing like a schottische or galop played with those mellow horns and violins to evoke a time of such different manners.

These and many other Smithsonian recordings, by the way, can generally be bought at commercial stores as well as our museum shops. They have won four awards during the 1970s.

A new book entitled *Museum Security* has just been put together by Robert Tillotson, Assistant Director for Administration in the Museum of History and Technology. It is a compilation of the knowledge of museum people from some 14 countries—not just security people, but administrators, too—who are concerned about the dangers faced by all museums, large and small, and other cultural sites.

Published in Paris, the book is bilingual and makes use of many Smithsonian photographs. The security measures that it describes—foil tape on windows (*les bandes métallisées sur les fenêtres*), photoelectric eyes (*les cellules photoélectriques*), contact mats (*les tapis contacts*) and other deterrents to museum wrongdoings, not to mention fire (*l'incendie*)—are all familiar to anyone who has visited or worked at the Institution.

Our security force, numbering about 500 people, has the rather awesome responsibility of immediate visibility. A guard is the first person you see when you visit any of the museums. He or she is the ubiquitous yet unobtrusive person who points out that even though you've driven all the way from El Paso to see the Smithsonian, you can't park in the employees' lot, who keeps your youngest child from falling into a fountain and your oldest from bringing a runny ice-cream cone inside the Renwick.

Each museum has a guard unit, varying in size with the amount of work required of it. The National Air and Space Mu-

# How to tell original prints from cheap reproductions.

Buying original prints is an excellent way for the novice to make a modest investment in beautiful works of art.

The buyer had better beware, however.

As more and more attention is being given to art as an investment, more and more dealers are trying to pass off cheap reproductions as fine art.

At the Original Print Collectors Group, we sell only fine original works to a growing number of people who are enthusiastic about buying good art at moderate prices.

*Salvador Dali's original lithograph, "La Danse". Signed limited edition of 195.*

One of our primary concerns is to educate our customers, so that they'll be able to discriminate and get true value for their money.

A few pointers, then about original prints:

Original prints, whatever the process used to create them, are "hand-pulled" under the artist's supervision, or by the artist himself. This means that any work produced photographically or by another purely mechanical process is not an *original* print.

If you examine a print under a magnifying glass and discover a regular pattern of small dots, you will know immediately that it is not an original work.

If the print is a serigraph (produced by a silkscreen process), the ink will seem rather like paint and appear to be sitting upon (rather than absorbed into) the paper.

Etchings and engravings will produce a physical impression on the paper itself.

Contemporary original prints will always be signed in pencil by the artist himself, to indicate personal supervision and approval of the individual print.

Original prints are always produced in limited editions, at the most several hundred copies. If thousands of copies are available, then the work is almost certainly *not* original. (In most cases, to assure that the integrity of their work is not violated, artists will destroy the plate after the edition has been produced.)

*Joan Miró's original lithograph, "Entre Chien et Loup". Signed limited edition of 75.*

The print will have a figure on its border, indicating the number of prints pulled and the number of the individual print in the sequence.

For example, the figure 50/100 means that the edition has been limited to 100, and that this is the 50th print pulled.

© 1977 Original print collectors Group, Ltd.

*Jan Balet's original lithograph, "Blanchisserie". Signed limited edition of 300.*

**Is the edition limited and is the print numbered?**

**Did the artist personally sign the individual work?**

There's a lot more to be learned about buying original prints, more than we can tell you on this page.

But if you'll send for our free color brochure, we'll be happy to tell you more, and show you the quality and variety of the prints we offer.

They include limited edition etchings, serigraphs and lithographs by both contemporary and traditional artists with international reputations. Some examples: Calder, Chagall, Dali, Delacroix, Picasso and Renoir.

*Alvin Sandler's original etching, "Laguna Luminosa". Signed limited edition of 99.*

If you decide to buy a print, we'll frame it handsomely and send it to you with a full money back guarantee. If you're not satisfied for any reason, you simply return your print and get a full refund.

We'll also send you a brochure, every two months, featuring new selections of prints, along with an informative newsletter.

If you're interested in investing in art, invest a 13¢ stamp in your art education and send for our brochure today.

**Original print collectors group, Ltd.**

120 East 56th Street, Dept. S21 New York, N.Y. 10022

☐ Please send me your free color brochure, sample newsletter, and other information, with no obligation.

Name _____

Please print legibly.

Address _____

City _____ State _____ Zip _____

*From the shores of Gitche-gumee . . .*

**WILD RICE BRANDIED DUCK BREASTS**

Minnehaha Wild Rice and a rich, heady sauce do great things for wild or native ducks, in a recipe so easy you'll fix it often.

**3 cups cooked Minnehaha Wild Rice (1 cup uncooked)**
**1/3 cup brandy, 1/3 cup sherry, 4 tbsp. Grape Jelly**
**¼ lb. butter, 1 tbsp. Worcestershire sauce**
**4 duck breasts halved, skinned and deboned**
**2 tsp. cornstarch, 2 tbsp. water**

Cook wild rice as usual. In covered skillet melt butter, stir in brandy, sherry, grape jelly and Worcestershire. Bring to boil, stirring to dissolve jelly. Add duck breasts. Cover. Reduce heat to low. Simmer ducks 20 minutes, turning once.

Place wild rice on serving platter; top with duck breasts; cover and keep warm. Blend cornstarch in water until smooth. Add brandy liquid to mixture placing in skillet. Stir and cook over low heat until thickened. Spoon sauce over duck breasts and wild rice. Serves 4, superbly! More recipes in every perfect pound of Minnehaha Wild Rice.

MINNEHAHA WILD RICE, INC. SM-10
WCCO Radio Building—Suite 420
Minneapolis, Minn. 55402
Please send, postage paid:
—Three 1-lb. bags @ $19.90/shipment $_____
My check is enclosed for total: $_____
Name_____
Address_____
City/State/Zip_____

Write for your free sample slice

*Mary of Puddin Hill*

**PECAN FRUIT CAKE**

Let Mary prove she has the finest tasting fruit cake ever! Fresh new-crop Texas native pecans, luscious cherries, pineapple chunks, rich dates, light batter — that's what it takes to make Mary's world famous Puddin Hill Pecan Fruit Cakes. Send for your free sample slice today and get Mary's new 1977 book of Puddin Hill Kitchen gift suggestions. It's free too! Or order from this ad.

**1¾ lb. Cake . . . . . $ 8.45**
**2¾ lb. Cake . . . . . $11.75**
**4½ lb. Cake . . . . . $16.95**

Postage Paid Anywhere in U.S.

*Mary of Puddin Hill*
**BOX 241-73, GREENVILLE, TEXAS 75401**

**Crystal Flight** hand sculpted American Eagle by William Burke.

Forty years ago Wm. Burke began his apprenticeship with a German master glass blower. Today Paul McAfee and Friends offers an exclusive limited edition of 100 crystal eagles, 5¾ in. high, with a 12 in. wing span, hand sculpted, signed and numbered by Mr. William Burke. You may order your eagle in two versions: using VISA, Master Charge, American Express, check or money order: (1) Crystal eagle on a 2 in. thick marble base--$770.00. (2) Translucent satin eagle on 12 x 15 in. marble base with leaded glass cover--$1,400.00. Write or call for **FREE CATALOG**, or send $1.00 for more photographs of Mr. Burke's eagle.

PMC AND FRIENDS

Paul McAfee and Friends Ltd.
841 West Genesee Street
Skaneateles, New York 13152
(315) 685-5120

seum, now working on its 13-millionth visitor since last year's opening, rates the largest guard force—to keep children from trying to reach out and touch historic wing tips from the balcony, to bar people in flip-flops from taking the escalators, to politely admonish nostalgic 50-odd-year-old men who want to climb into once-familiar cockpits.

Guards are organized to prevent trouble from beginning to happen. Thanks to their presence—along with dogs after closing time and sensory devices all the time—no one tries to rip off the Hope Diamond or the moon rock, no one breaks a statue, no one even messes with a lock. Vandalism is rare indeed. Richard Ault, Director of Support Activities, and Robert Burke, Director of the Office of Protection Services, feel that's partly because the Smithsonian belongs to everyone, and most people don't deliberately smash up their own things.

Of course anecdotes buzz about the security force like bees around a hive. One suffices: an entry in the police blotter of one museum was brief and formal, written in that agonized style of all police blotters. To paraphrase: "Visitor, male, made indecent proposition to second visitor, male. Latter individual became angered. First individual ran with second in pursuit. Pursuit was fruitless."

Last November, this magazine published a story about pistols in the Burr-Hamilton duel, indicating the possibility that Hamilton might have rigged them to give himself an advantage. The article resulted in letters refuting the evidence of the pistols, decrying the implication that Hamilton was anything but the soul of honor and virtue and relegating Burr back to the state of villainy in which he is most recognizable to schoolchildren.

But at the National Portrait Gallery a small and tasteful exhibit called "Aaron Burr Acquitted" has been running since May, graphically showing that aside from the Hamilton duel, Burr was victimized by President Jefferson for his expansionist ambitions in the West and should never have been tried for treason (he was cleared). Burr comes through as a complex, rather likable man, hampered by personality gaps. He was surprisingly naive, politically.

All of you who have been writing letters about this brouhaha are advised to go and see the exhibit while it lasts.

—Edwards Park

The Kodak Ektasound movie camera makes it so easy to take sound movies. Just drop in a cartridge of film, such as Kodak Ektachrome 160 sound movie film, and push the shutter release. It's that simple.

And the microphone? It's right on the handle! So, you're free to move around and shoot wherever you want without worrying about cords or microphone placement.

You don't need movie lights, either. Indoors or outdoors, in room light or sunlight, the Kodak Ektasound movie camera takes colorful sound movies without movie lights.

There's also an automatic exposure control that adjusts the amount of light reaching the film.

## Kodak's unique on-camera microphone. Sound made simple.

And, there's a sound monitor so you can hear what the camera is hearing–both before and during use.

Ask your photo dealer for a demonstration. There are several models to choose from including the new model 250 with power zoom and the new model 260 with power zoom and coupled rangefinder.

## Kodak Ektasound movie cameras

*By David Morris*

# Solar cells find their niche in everyday life on Earth

*If their cost continues to drop, we can one day have these space-age energy producers sprouting from our rooftops*

The next time you buy a calculator, a wristwatch or even a new home, its electrical power source may be almost magical solar cells. These light-transforming wafers of silicon generate electricity silently, using nothing more than sunlight for fuel. They are beginning to supply electricity for commercial and agricultural uses in remote areas far from power lines. Although still in their infancy, it is increasingly likely that solar cells will become the centerpiece of our solar electric program and part of the answer to the energy crisis. Pioneers in this highly sophisticated field hope to provide low-cost electrical energy from rooftop solar panels by the mid-1980s, a development with profound implications regarding the utility industry and the nature of our neighborhoods and households.

Although the basic patents for solar cells were established in the early Forties, the first breakthrough in their manufacture came at Bell Laboratories in 1954. Bell's applications of one-meter solar arrays as voltage amplifiers was a pioneering step. The cells became more familiar in the 1960s, providing electrical power to spacecraft. Those used in the space program were very expensive, but cost was not the primary concern. With no other market, manufacturers had no incentive to lower the cost.

A few systems were established on Earth, using cells that had not met the requirements of the space program, but few cells designed for terrestrial use were produced until 1973.

Water spurts into an irrigation pond in a Nebraska cornfield, left. The pump is powered by the rows of solar cells at the right of the picture. Above, a technician checks batteries used for back-up power. This row of batteries will store about six hours of electricity; the pump does not run continuously.

*Solar cells come down to Earth*

Viewed partly in a truck mirror, an array of solar cells provides electric power for a mobile

Solar cells should not be confused with the solar collectors used to heat water and buildings and, by producing steam, to generate electricity. Collectors convert sunlight into heat; solar cells convert it directly into electricity. Sunlight striking the cells frees electrons, forming an electrical current.

In space the sun is always shining, so there is no problem with storing electricity. On Earth, however, the sun shines only half the time in good weather and not at all in bad, so electricity must be stored for sunless periods. (Wind-powered electric systems have the same problem: electricity must be stored for times when there is no wind.) Currently this is done with lead-acid storage batteries, similar to those used in automobiles. A day's electricity for an average single-family house can be stored in batteries occupying the space of a closet; a row of such "closets" in the basement store power for sunless periods.

If, as some expect, solar cells come to be used in neighborhood-size rather than single-house systems, then storage, too, would be central. Two thousand homes would require about as much storage space as a million-gallon water tank, a not unfamiliar sight in many communities.

Present batteries present safety problems (from the sulfuric acid in them) and are expensive; it takes about $40 worth of batteries to store one kilowatt hour. So along with the research on solar cells, a lot of work is being devoted to batteries using chemical reactions other than lead-acid.

Back-up systems can be used. A house fitted with solar cells can be left connected to the local utility; during sunless periods the house is simply switched over to the conventional source. (This way, the house can feed any surplus it produces back into the grid system as well; this is already happening with some wind systems.) And diesel generators can be used, just as they are now in hospitals and homes when the power fails in a storm or blackout.

Large central systems generating electricity with solar cells or windmills can store power in other ways. One is to pump water up to a reservoir during periods of low demand, then let it run downhill through turbine generators when demand is high. Another is to extract hydrogen from water by electrolysis during low demand, then run gas turbines with the hydrogen during peak demand. Still another way is to use surplus power to spin huge flywheels, storing the energy as momentum.

Confident that storage problems will be solved, manufacturers are concentrating on making better and cheaper cells. The cells are extremely thin (12 thousandths of an inch). At present all commercial cells are made of silicon, the second most abundant element in the Earth's crust. But they can be made from other materials; two companies are about to produce cells made of cadmium sulfide. The largest cells made today are

*The author, codirector of the Institute for Local Self Reliance in Washington, is a columnist for* Solar Age. *He coauthored* Neighborhood Power.

Army telephone system. The Army is exploring other possibilities at Fort Belvoir, Virginia.

four inches in diameter. They are wired together in panels of dozens or hundreds.

The output of solar cells is often given in "peak watts," the amount of power produced in full sunlight at 77 degrees. A four-inch cell can provide slightly more than one peak watt at noon on a sunny day in an area such as Phoenix. Higher temperatures decrease the efficiency of silicon cells.

For many readers, a more relevant term may be "average wattage." The peak watt is what we get in ideal conditions; the average watt is what we get at any time, assuming adequate power storage. Over a year, we may average four to six hours of sunlight a day. Thus the ratio of peak to average is about five to one, a little less in Arizona, a little more in Minnesota.

The average single-family residence (a four-person, 1,500-square-foot, non-air-conditioned house) uses about 700 kilowatt hours a month, the equivalent of a one-kilowatt generator running continuously. Because this average house needs one kilowatt of average power, it requires five kilowatts of peak power. This, in turn, would require about 500 square feet of solar cells at present efficiency levels under optimum conditions. The Energy Research and Development Administration (ERDA) says 1,500 square feet would now be required in a northern area such as Boston.

In the last four years the price has dropped from $500 to $13.50 per peak watt. The cells are already cost-effective in remote areas, places where expensive heavy-duty batteries would otherwise have to be maintained and discarded regularly. Offshore oil platforms, buoys and remote weather and forestry stations are places where solar cells are now routinely used.

Most observers agree that the price will have to drop to a dollar or 50 cents per peak watt before solar cells on rooftops will be competitive with conventional central power plants.

The very recent entry into the marketplace by solar cells has produced a considerable gap in public understanding. Indeed, since 1974 the industry has advanced so rapidly that ERDA is reevaluating its programs. Henry Marvin, director of the Solar Energy Division, has assumed management of the solar cell or "photovoltaic" program. "The program was not keeping up with the technology," Marvin says. "ERDA was no longer pushing industry. It was no longer in front."

*The price of purity*

The very high cost of ultrapure semiconductor silicon has been a barrier to lowering the cost of solar cells. Metallurgical-grade silicon has a purity as high as 99.5 percent, and it costs 10 to 20 cents per pound, roughly the same cost as steel. The semiconductor-grade silicon, used in solar cells, however, has a purity of 99.99999 percent and costs $10 to $20 a pound. Microminiaturized circuitry demands this kind of purity, but it adds a great cost burden to solar cell manufacturers. Of the present $13.50 per peak watt, approximately $3.50 is for high-grade silicon.

Over the last three years, ERDA has chosen to concentrate on lowering the cost of the single-crystal process, in which each cell is sliced from a large, very pure, man-made silicon crystal. ERDA formerly believed that polycrystalline silicon, a cheaper, multiple-crystal form with lower purity levels, would have very low efficiencies. (Efficiency here means the percentage of energy in sunlight striking the cell that is converted into electricity. Present efficiency of single-crystal cells is 10 to 14 percent.)

Although many industry experts as recently as 1973 concluded that polycrystalline solar cells with a 10 percent efficiency could not be developed until at least 1983, two companies developed such cells independently in 1975.

Technology is changing faster than almost anyone realizes. In 1975, experts maintained that so much energy was required to make solar cells, they would not generate enough energy to pay back the initial ex-

Panel at left sends a weak current through the steel reinforcement in these bridges, preventing corrosion.

This Remote Automatic Meteorological Observation Station is powered by solar panel near the bottom.

penditure within their 20-year lifetime. Yet a 1977 report done for the federal government on an actual production process not only found that the payback period was between four and six years, but went on to advocate the establishment of a solar breeder. A company could produce cells, put them on the roof, and use the electricity to make more cells. With slight refinements, many believe the payback period can be less than two years.

These rapid technological developments have the industry straining to transform technical developments into production-line processes. As one observer asked, "What good is a polycrystalline cell if it is not mass-produced and marketed?" Limited markets are delaying this step. A rapidly expanding market would permit manufacturers to invest the capital to automate their machinery and reduce prices.

It is unlikely that the market will open up very rapidly by itself. There are already thousands of locations where solar cells can be used economically, but the newness of the industry means every potential customer has to be educated anew.

Another marketing problem is the remote locations of existing solar-cell arrays. They grace the Arctic, Antarctic mountain peaks and north African deserts. No one sees them. One manufacturer laments, "The first national exposure for solar cells occurred when we installed some on a toilet facility in Yellowstone National Park."

Even in areas where solar cells are currently economical, their high initial cost makes local agencies hesitate. Few are experienced at considering costs over the

lifetime of a system, a method of evaluation in which solar cells can be competitive. Many procurement officers appear to prefer to wait for a lower purchase price.

With the need to stimulate the market in mind, ERDA began direct purchasing of solar cells in 1975. It will purchase solar arrays capable of producing 160 to 200 kilowatts in 1977 and plans to buy more in fiscal 1978. Dick Weingarner of Optical Coating Laboratories, Inc., sums up the general feeling of manufacturers by saying, "It is good to see ERDA involved in direct buying, but this kind of national program will not bring the price down. Production levels need to be significantly higher before prices will fall significantly."

For many, the Department of Defense is the logical agency to make major purchases. A recent study identified military potential applications for solar cells as many times greater than current annual production. But the Defense Department has yet to be convinced that solar cells are superior to traditional diesel generators and battery systems.

In 1976 the ERDA photovoltaic budget (about $59.4 million) was many times the total sales of terrestrial solar cells (about $7 million last year). The agency bought 20 percent of the industry's output, spending the rest of the money for research and development.

According to Dr. Marvin, ERDA will purchase $10 million of photovoltaic equipment in 1978 and spend another $30 million on research, development and overhead costs.

*Raising the money*

Congressional supporters have introduced legislation to increase substantially the level of federal purchases. The House approved a bill calling for a $39 million, three-year procurement program beginning in 1979. The Senate is discussing a $98 million purchase over the same time period.

Until now, however, the companies producing terrestrial solar cells have been relatively small. Big business has been reluctant to enter the solar-cell market aggressively. Mobil, Exxon, Shell, Hughes Aircraft and a French petroleum company do own solar-cell manufacturing or research companies, but to date few have been willing to invest the money needed to develop the market.

One of the most intriguing aspects of solar-cell development is their potential for decentralization. The cells operate most efficiently where the electricity is used. The farther they are from the consumer, the cheaper they must be to be competitive. While rooftop solar cells can be competitive with coal or nuclear power plants when the cell cost drops to 50 cents to $1 per peak watt, central solar plants would require a price drop to 20 cents.

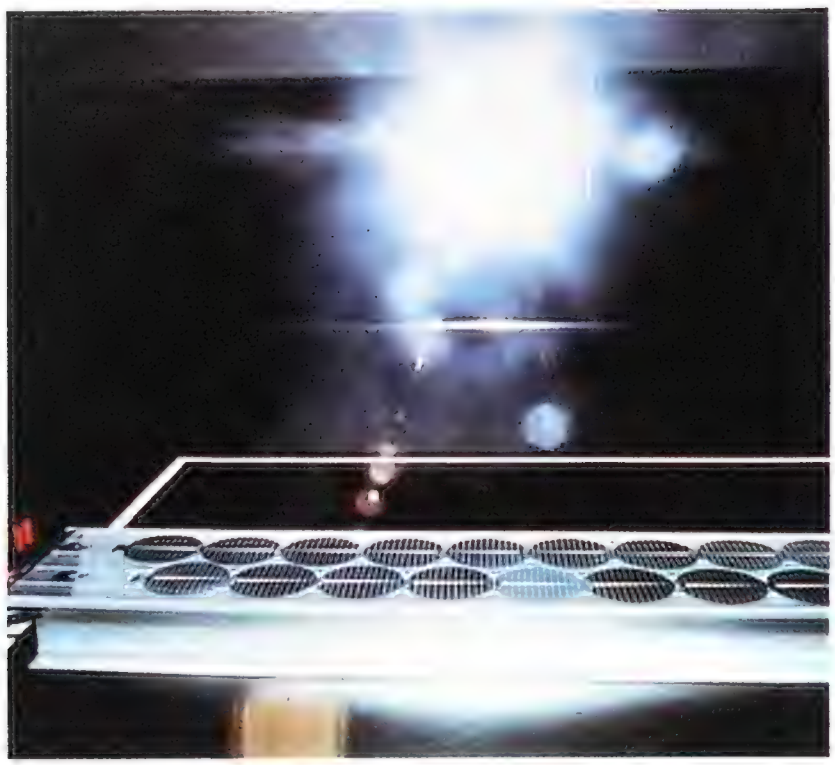
In a remote Texas A&M farm field, solar cells power a trap used to sample insect populations.

Except for multistory buildings, the average rooftop has enough space to provide all the power needs of the building "with enough left over, say, to charge an electric car," noted Jerold Noel of Tyco Laboratories in 1974. Joseph Loferski of Brown University estimates that in Rhode Island 20 percent of the rooftop space could generate enough electricity to supply all of that state's needs.

ERDA predicts that a household system will cost $5,000 to $6,000 in 1985. It will supply all energy requirements except for a portion of the space heating. Is this the wave of the future? No one knows, but decentralization is a factor in the discussions.

Dr. Joseph Lindmayer, Solarex Corporation, told Congress: "The many letters we have received at Solarex and the many audiences we've addressed have convinced us that a major motivation for the growing popular support of solar energy is the fact that it can be controlled by individuals and local communities."

The utilities are studying solar-cell systems in three actual operations through their research association, the Electric Power Research Institute. Dr. Edward DeMeo of EPRI concedes the possibility of household systems, but believes centralized systems will prove more reliable. "I have some serious problems with individual rooftop arrays. One of the principal problems is maintenance. I don't think the individual will want to accept responsibility for his apparatus. We just don't operate like that. A possible scenario may be for the utility company or other organization to buy and install these on roofs and take care of maintenance. Once that step is taken it makes sense to try to aggre-



A panel of new solar cells is tested in a "black room" by being exposed to a simulated sun.

gate the apparatus at some level, possibly one megawatt (200 households) in a central location purely for maintenance reasons and ease of installation."

The Office of Technology Assessment recently considered the decentralization issue: "If on-site energy equipment can be installed on a large scale at prices that are competitive with utility rates, a 30-year trend toward central power production would be reversed. . . . It would also challenge the premise on which existing regulatory law is founded: that because of economies of scale, utility companies are 'natural monopolies' and competition should be replaced by regulation to protect the public interest."

When the price of solar cells falls below eight dollars or five dollars per peak watt, they will become more widely used. The Agency for International Development and the World Bank have seriously explored the feasibility of using solar cells in those villages in developing countries where no electric grid system exists. Solar cells may become competitive for those applications within a year. Thus the solar industry will be building up experience in self-sufficient village systems in developing nations, before the price drops to where they are applicable in our own villages.

As the price drops still further, solar cells will become attractive for widespread use in industrialized countries. At 50 cents per peak watt the cost of electricity would be six to eight cents per kilowatt hour, comparable to costs in many cities now.

As noted above, however, central systems would require a cost of only 20 cents a peak watt. Whether this level can be reached is a point of considerable disagreement in the industry. Such a cost would translate into two dollars a square foot. No one is saying this isn't possible, but most agree that there must be some lower limit to solar-cell cost, and that decentralized applications will come first.

Some answers about solar cells may come from the community college project now under way in Blytheville, Arkansas. For the first time ERDA has awarded a contract directly to a user, which in turn has put together a technical team and is asking for bids from manufacturers. Integrated heat and photovoltaic systems are being used. The Mississippi County Community College will be designed to have a 250-kilowatt array that will use concentrating collectors. Light collectors will focus the sunlight onto the solar cells, getting more electricity from a given area of cell. Because the concentrator itself is less costly than the solar cell, the cost for the electricity should drop, perhaps to as low as $4.50 to $6 per peak watt. The system will also test a new type of battery, expected to be cheaper and more efficient.

The future of solar electricity looks bright. Considering that the first solar cells for use on Earth came off the production line in late 1973, the pace of development is extraordinary. Whether the market can increase rapidly enough to meet the price goals set forth in ERDA's national plan is the most pressing question. Yet each year, as the price continues to drop and the cost of conventional power continues to rise, these tiny devices demand more attention in all of our future energy planning.

In another Army test, these solar cells produce 11 kilowatts to power a water purification system. Other tests involve radio and radar power supplies.

CAUTION

Royal Museum of Fine Arts, Antwerp

*By Rudolph Chelminski*

# The Rubens Year—a celebration

Even in comparatively delicate works meant as design, Rubens' ability to convey sculptural volume was extraordinary. This sketch for *The Triumphal Car of Calloo,* now transformed into a carriage by a current sculptor (above), is an example. It celebrates two victories, June 1638, by Spanish Netherlands over Dutch at Calloo and over French near St. Omer.

*Photographs by Dmitri Kessel and the Royal Museum of Fine Arts, Antwerp*

*Celebrating the Rubens Year*

*The birth date four centuries ago of the baroque master artist is the occasion for a feast of exhibitions and other events*

The view from the formal garden of Rubens' grand house. Land was bought in 1610. Five years later

It is only an accident of politics and history that Peter Paul Rubens should have missed being born in the city with which he is most intimately identified and which is the main focus of his ongoing quadricentennial celebration in what has become known as The Rubens Year.

As it happened, Rubens' father Jan, a legal scholar and an Antwerp alderman, was in exile and so Peter Paul was born—on June 28, 1577—in the Westphalian town of Siegen instead of in Antwerp.

It all made little difference in the end, for Rubens came, nevertheless, to Antwerp as if destined to live there, and there he became one of the world's most spectacular and prodigious artists—a one-man summation of all that was so thunderously compelling in baroque painting.

Rubens in his lifetime achieved throughout the Western world a prominence as an artist perhaps unequaled until Picasso came along some three centuries later. There have been Rubens anniversary shows this year in London, Paris, Cologne, Vienna, Genoa, Florence and Leningrad. But the celebration closest to home, closest to the man and the largest ever to be given him, was the one in Antwerp, the city of his ancestors and his principal place of work and life. Rubens, quite simply, loved his city. His city, through the centuries, returned the feeling. There he learned to paint, married twice, sired nine children, achieved wealth and fame, and built a remarkable residence and studio, which is today a Belgian national treasure.

The fact that he wasn't actually born in Antwerp is only a biographical detail.

Still, the circumstances of his expatriate birth were somewhat typical of the dislocated age in which he lived, and might be taken as a preview, in part, of his coming career. His father was in exile from the then Spanish Netherlands because he had shown Calvinist sympathies during the dangerous period of Protestant-Catholic bloodletting, but it was this same strife that would be the indirect cause of some of Rubens' most important commissions a few decades later.

Like his father, Rubens was destined to travel widely, and he became a diplomat of considerable reputation and erudition. But, whereas Rubens combined work with work, so to speak, by obtaining commissions for paintings while plying the diplomatic route in high circles, his father had combined work with play. It is obvious to underline Rubens' joy in the visual orchestration of opulent female beauty, but less is generally known of his father's earthier predilection for the field. Rubens *père,* as counselor to Princess Anne of Saxony, the wife of William of Orange, some would say carried personal diplomacy a bit far in 1571 by making her highness pregnant. It was only through his forgiving wife's pleas that Jan's head was saved.

After Jan's death in 1587 Marie Rubens returned to Antwerp with her children, where Rubens followed his natural penchant for art by apprenticing himself to three different painters under the ancient and hon-

he moved in. In 1937, city of Antwerp acquired the mansion and grounds and fastidiously rebuilt it.

Interior of the master's superb studio, situated in right wing of mansion, which is now a museum.

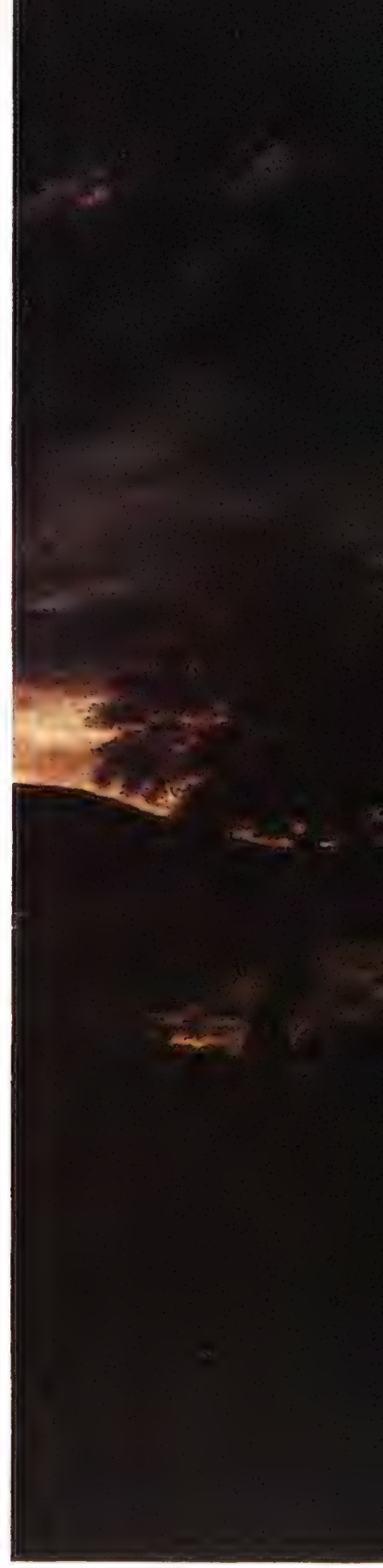
orable guild system. By age 21 he had earned the title of Master of the Guild of St. Luke. In 1600 he set out for the traditional pilgrimage to Italy, to study at first-hand the works of the masters who, even then, were already legendary: Michelangelo, Raphael, Titian, Tintoretto, Veronese, Correggio, as well as such contemporaries as the Carracci and Caravaggio.

In all, he spent eight fruitful years in Italy, most of them in the service of Vincenzo de Gonzaga, Duke of Mantua, a passionate esthete and art collector. As he studied and drew and painted and traveled and learned, he was methodically maturing a talent and a reputation which preceded him when he finally returned home in late 1608. Good fortune came almost immediately, and it lasted: the Archduke Albert and the Infanta Isabella, regents of the southern Netherlands (what is now Belgium was then a part of Spain's empire), named him court painter, but with the extraordinary privilege of being able to live—tax-free, to boot—in Antwerp rather than in Brussels. Orders flowed in from church and noble clients, and the rich bourgeoisie soon followed. Rubens married Isabelle Brant, an 18-year-old daughter of a lawyer.

He never stopped painting, and neither his genius, his wealth nor his world glory diminished until his death in Antwerp in 1640. Unlike many of his contemporaries, Rubens had it made from beginning to end. It was only natural, then, that the Antwerp show be the biggest and the best of all.

The show? The shows, rather. Dour old Antwerp has made a veritable fiesta this time, decorating virtually the entire year with Rubens. It began with a didactic exposition on the man's life, which opened last March, then rolled on through an ingenious series of Rubensian sidelights and trivia (The Fame of Rubens, Engraving after P. P. Rubens, Medical Science around Rubens, Music of Rubens' Time, Jurists and Legal Life in the Time of Rubens, to name a few), finally culminating *pianissimo* in November with the small but sparkling show, Diamonds in the Time of Rubens. There are Rubens ice-cream cups for sale in the streets, and cafés are doing a brisk business in Rubens beer, Rubens wine, Rubens cold-meat plates and Rubens hot menus; there are Rubens brioches, Rubens roses, Rubens cocktails, Rubens sauces, stores named after Rubens, and of course an endless parade of Rubens souvenirs. But the keystone event of the 1977 celebration is the exhibit of paintings, drawings and oil sketches which opened June 28 in the newly renovated Royal Museum of Fine Arts and went on with immense success through the next three months. It was the biggest Rubens show ever with 109 canvases and 63 drawings brought together from museums and private collections in 17 countries.

The show is not perfect, by any means. It doesn't take great scholarship to imagine numerous paintings which should appear in the ideal Rubens show and which are not at Antwerp, but that ideal show will never come to pass, in Belgium or anywhere else. Many of the great paintings are too delicate now,



Rubens' interpretation of the figure was built upon intense study of sculptural forms and Renaissance artists, transmuted with great technical skill into his powerful versions. Here, *Jesus in the Sepulcher.*

Royal Museum of Fine Arts, Antwerp

transport too chancy, insurance rates prohibitive. Considering these difficulties, Frans Baudouin, chief conservator of Antwerp museums and coordinator of The Rubens Year, and his colleagues did wonders putting together what they did.

Citizens of Antwerp are doubly proud of the success of "their" year, because it symbolically rights some ancient wrongs that had been visited upon their city since the time of Rubens and even before. In the early 16th century, Antwerp had been the commercial hub of Europe, and among cities north of the Alps its 100,000-plus population had been topped only by Paris. Then, along with the religious wars and the Dutch drive for independence from Spain, came disaster with the closing of the River Scheldt, which passes through Dutch territory on its way to the sea. Antwerp languished as a port and as a business center but boomed and bloomed in art, thanks to Rubens and his followers. Rubens and the ever-present diamond trade kept Antwerp on the map throughout the

A Venus, despondent yet resplendently Rubensian, was inspired by Latin phrase, *Sine Baccho et Cerere Frigit Venus*—without gods of wine and corn, love languishes and the goddess of love is chilled.

Staatliche Kunstsammlungen, Kassel

18th and 19th centuries, but in our time the great man suffered that curious and inexplicable eclipse in popularity that seems to come in cycles to every major creative figure. It became fashionable to disparage his art as bombastic and excessive, his women as too fat, and to repeat vague innuendo about the assembly line of students and helpers who turned out most of his paintings, anyway. All of this was at the very least, arguable, at the very worst, false or inaccurate; but it contributed to an attitude which made the city of Antwerp suffer. Today, still, Baudouin winces at the memory of letters addressed, "Antwerp, Holland."

How to explain the burgeoning Rubens fan club? Baudouin has a theory.

"You find almost limitless optimism in Rubens. He creates forms in which Man affirms himself, whereas today we are all hesitant and doubting. We wonder where we are going, and why. With Rubens, on the other hand, you have faith, paradisaical landscapes and a positive belief in life. His dynamism strikes

The bedroom. A bed in a chest, good for chilly nights. Portrait is of Hélène Fourment who wed Rubens when she was 16 (he was 53) and bore him five children.

A corner of the baronial dining room. Abstemious in his use of wine and food, the master nevertheless liked to entertain here. His self-portrait, center.

viewers, actually seizes them. He celebrates the grandeur of mankind."

Of womankind, too, he might have added. Rubens' fondness for pink, billowing beauties—what Baudelaire called "pillows of fresh flesh"—strikes some modern sensibilities as ridiculous, but then who are we to judge the tastes of the day? And further, Baudouin insists, it was simply the baroque manner, and all the more so the Rubensian manner, to overstate, exaggerate and enlarge: the Rubens' vision was bigger than life. This holds as true for the suffering, muscled athlete he imagined as Christ in *The Erection of the Cross* as it does for the formidable female crouching disconsolately in *Venus Frigida* (p. 51) or the astonishing, symbol-laden scenes he invented to illustrate the life of Marie de'Medici. Our age reacts with analytical skepticism toward his hordes of naiads and angels and putti (couldn't fly worth a damn with those little bitty lifting surfaces), but Rubens skates majestically on the thin ice over the swampy waters of kitsch.

"I confess," he wrote, for once employing understatement, "that I am, by natural instinct, better fitted to execute very large works than little curiosities."

He worked hard. If his art can be thought Italianate in its grandiloquence, his work habits were northern and controlled: Baudouin estimates a total lifetime production of around 1,800 paintings. Even when he was established at the summit of his glory, even when

he was rich and respected and sought after by most of the great names in Europe, Rubens rose every morning at 4 A.M., heard Mass (his father's Calvinist leanings apparently never rubbed off, and he lived and died a Catholic) and worked until five in the afternoon, painting while a hired scholar read aloud from Plutarch, Seneca or other authors of his predilection, and in the original. After all, he spoke Latin, Flemish, German, Italian, Spanish, French and English.

Rubens was continually called up by his sovereigns and protectors for special-mission diplomacy. He had proved his aptitude for the complex psychological game of foreign intrigue and persuasion while he was still in his twenties and in the service of the Duke of Mantua. He journeyed to the court of Spain as the Duke's emissary and quickly developed the personal formula which was to serve him time and again later: proximity to the wielders of power through his art, served by an unusually winning personality.

Charles I of England was so impressed with Rubens that he knighted him and made him Master of Arts at Cambridge, ordering at the same moment a sumptuous fresco for the ceiling of his banqueting house in Whitehall Palace.

Belgians today have a tendency to become agitated when the subject of Rubens' prodigious output is broached, because of the hoary folklore about his students or helpers doing most of his work for him.

View from large bedroom showing inner court and entrance. Here Rubens spent his last days.

Baudouin, a man who has made a careful study of the question, manages to retain his calm. Certainly Rubens had assistants, he says, and sometimes collaborated with other painters of first-rank importance, but the extent to which outside hands should be given credit for Rubens' tableaux has been grossly exaggerated over the centuries. His studio was nothing like the factory or assembly line of popular mythology.

Puyvelde is more categorical in his book *Flemish Painting in the Century of Rubens,* describing the factory allegation as "pure legend." While admitting that he had occasion to work with such masters as Frans Snyders, Jan Brueghel and Anthony van Dyke—as honest artisans they saw no reason not to pool their efforts from time to time, and never sought to hide the fact—Puyvelde concludes: "One who could paint, as he did, *'fa presto'* when his exaltation communicated all the fire of his genius to his work, had to do with nothing more than modest studio helpers charged with passing him fresh pallets."

Rubens' success was so great, and his energy so permanent, that he seemed immune to most human troubles, but his optimism suffered a serious blow in 1626, when his wife Isabelle died of the plague.

"Such a loss seems to me worthy of deep feeling," he wrote, "and since the true remedy for all ills is Forgetfulness, daughter of Time, I must without doubt look to her for help."

In 1630, aged 53, he married 16-year-old Hélène Fourment, daughter of an Antwerp tapestry merchant, said to be the most beautiful woman in Flanders.

His new wife became the model for his feminine ideal and the subject of some of his best work; and in time the couple produced five children.

And yet, ten years after his second marriage on the 30th of May 1640, he succumbed to the gout which had been bedeviling him on and off for years. Rubens was buried, temporarily, in the Fourment family tomb in the Church of St. James. He requested in his will that the chapel where he was later buried be adorned by his *Madonna with Saints,* popularly viewed, but not by scholars, as representing Rubens himself as St. George, with his two wives and one of his children.

Two weeks after his burial, Mathieu de Morgues, the abbot of Saint Germain, wrote to a friend in Antwerp: "I have learned that Mr. Rubens has quit us to go see the originals of several beautiful paintings which he left behind."

And eight months after the master had disappeared, Hélène Fourment Rubens gave birth to Constantia-Albertina, their fifth child.

Final resting place for one of the world's grandest baroque masters, St. James Church, Antwerp. In his will, Rubens asked that this painting, *Madonna with Saints,* be hung over his tomb. It was done.

# *Seville Elegante is here.*

## *A new expression of Cadillac excellence.*

*Elegante combines the qualities of Cadillac's superb Seville . . . with elegant refinements you might expect only on custom-crafted automobiles.*

**Exclusive Interior.**
*Seating areas are upholstered with breathable, perforated leather inserts*

*designed especially for Elegante. In Antique Gray or Saddle. There's the confident feel of genuine leather on the steering wheel. And the backs of the 40/40 Dual Comfort front seats have convenient parcel pockets.*

**Personal Console.**
*Elegante features both a fold-down center armrest–and a functional console with interior light, rear floor courtesy light and provisions for writing tablet and pen. Additional compartments provide space for telephone installation or storage of tapes and personal items.*

**Wire Wheels.**
*Elegante moves on authentic, chrome-plated wire wheels with long-laced spokes. Full-length brushed chrome molding with etched black grooving accentuates the classic lines. An unbroken line of molding also frames the rear window. Other distinctive details include an exterior Elegante insignia in script.*

**Duo-Tone Finish.**
*The character of Elegante is perhaps best expressed in the subtle dignity of the exterior finish. Offered in Platinum and Sable Black as shown. Or Saddle Firemist and Ruidoso Brown.*

**Only Seville.**
*Most of all, Elegante is a Seville–one of the world's great cars. A unique American luxury car that shares its body and suspension system with no other. Only Seville offers a 5.7 Litre Electronic-Fuel-Injected engine as standard. Combined with renowned Cadillac comfort, convenience and quality. And almost every luxury feature is standard. Now, Seville offers you Elegante. At your Cadillac dealer's only.*

*Seville*
BY CADILLAC

GM
MARK OF EXCELLENCE

*By David Snell*

# Fever tick crashes roundup, causes trouble on range

*Uninvited, unwanted, unpleasant—a tiny interloper wrought havoc in Texas helicopter roundup. Cost to cattlemen: some $300,000*

To the perceptive listener, it might have seemed significant and perhaps premonitory, in the predawn stillness, that the coyotes were yipping and nattering and carrying on so, off yonder in the brush. They sounded more like sea gulls in raucous pursuit of a garbage scow than coyotes of the kind you hear howling in the John Wayne movies, silhouetted all lonesome and forlorn up there on the butte. Maybe, with the prescience which wild creatures are said to possess, they sensed the impending event.

For something noisy and disruptive was about to happen there in the Texas border country, along the Rio Grande northwest of Laredo. It would involve not the coyotes but cattle. Come this Monday in midsummer, on an 89-square-mile domain called El Chapote Ranch, a roundup and cross-continent cattle shipment would commence in a dust-swirling rush.

This particular spread is owned in absentia by descendants of families whose presence in the region predated the Republic of Texas. After the Civil War it was part of the vast south Texas funnel to the Chisholm Trail and helped fill the cattle drives which followed that fabled overland route a century ago.

In those days a herd of about 3,000 head was considered the manageable optimum for the long trek. It often required weeks and the work of many hands to gather a bunch that size, and then months to goad and graze them to their destination—often, California.

In its first phase, the operation on El Chapote would involve 6,200 cattle. Some were scrub descendants of those old herds, and most, if they weighed 650 pounds or better, were California-bound, this time by way of feedlots in Yuma. Thanks to new technologies of roundup and transport—including the use of helicopters and of double-decker trailer trucks—the merest fraction of the old delivery time would be required.

From helicopter, far as a fish-eye lens can see, vastness of El Chapote ranch surrounds trap (fenced area at right) from which cattle are herded into

The herd was a ragtag of crossbreeds (Brahman and longhorn, among other strains) and "Okies" (mixtures of the English breeds) acquired by Texas and California buyers at auctions around Texas. Consigned under contract to El Chapote last year, they had been, in

holding pen (center), then through chute (left), to separating pens, or to truck dock for transport to feedlots. Another 'copter hovers at right center.

effect, pasture boarders at $5 per head per month.

For nearly a year they had roamed El Chapote and fended for themselves among its rattlesnakes and predators. The ones that survived, and most of them did, became as wild as the terrain itself. The rainfall had been freakishly heavy through the winter, spring and early summer—17½ inches in June alone. Earthen "tanks," man-made watering holes, had filled; buffalo grass had greened the earth under thickets of mesquite and the patches of prickly pear cactus. The cattle had grown and fleshed out. Now, as "long yearlings" and "short twos"—cattle that are approaching two years of age—the steers were about to experience what would strike some old-time drovers as plumb unnatural.

During the last two decades many of the big spreads have used helicopters to herd cattle. Nowadays the roundup is no longer just a springtime rite; mostly, it is pegged to beef futures, and occurs whenever the paper herds on the commodity exchanges come due.

Here and now, another creature native to the border country was about to put in an appearance. It was a creature more dreaded by U.S. cattle growers than any coyote, wolf, cougar, rattler or coral snake ever could be. And for all the principals in the operation at El Chapote, the cost that this creature was about to inflict would be close to calamitous.

The creature was the Texas cattle fever tick.

For this roundup, two helicopters had been chartered, at $110 an hour each for actual air time working cattle, plus 50 cents a mile travel fee. They were on the way from Henrichson's Helicopter Service at Artesia Wells, Texas, 56 miles north of Laredo. Mr. Henrichson was sending his two best hands, 26-year-old Frank James piloting "Hotel Bravo" and Jerry Lee, 36, in "Romeo."

They came at sunup. Frank James was leading the way, taking a long sighting on a bend of the Rio Grande, yonder in the distance, and then homing in on the tall TV antenna tower behind the tar paper-covered bunkhouse.

Buddy Wheelis, 48, the ranch manager, was standing in front of the cookshack with his 18-year-old son Jeff, who'd be one of the crew working the cattle on horseback, at the pens and chutes. Jeff and his dad were finishing their second mugs of coffee and enjoying what was left of the night's coolness. They could hear the helicopters barreling in from the north, rotors popping the rising headwind. Buddy knew it would blow all day this time of year, up out of Mexico like the unrelenting breath of a blast furnace.

He glanced toward the bunkhouse where four or five of the help were sitting on the stoop, waiting. They were *braceros*—Mexican day-laborers, from across the river maybe. It wasn't like the old days, when a big spread like this would have its permanent crew.

Now you hire by the day. Top hands like Jeff, and Jeff's sidekick John Crabb, and Bud Williams there, and Fred Pierdolla's four boys from La Vernia who are on their daddy's payroll and went partners with him on 800 of the steers, and the hotshot Mexican cowboys, get top dollar: $30 a day plus keep. Common laborers get $15. That's for a full day, defined by the sun.

*Free-lance writer David Snell's article on CBers and long-distance trucking appeared in the June 1976* SMITHSONIAN. *His spread is a city lot in Houston.*

*Photographs by A. Y. Owen*

Buddy was glad the helicopters were coming on time.

Well, the boys in the helicopters, and the hands on horseback too, they'd have to gentle those steers, gentle them real easy, and flow them like rivers toward the traps and the pens. If you run them, hassle them around when there's no need, what you do is melt off dollars and cents.

Fred Pierdolla wouldn't cotton to too much shrinkage. But being a south Texan and used to the heat and the ornery ways of cattle, he'd grin and accept it.

What would Joe Solomon say? Soon enough Buddy would know, if things went badly. Mr. Solomon and a partner owned the rest of the herd, and the feedlot in Yuma, and he was flying in from California that afternoon to have a look-see.

Buddy Wheelis is a product of the evolution of ranching, a highly successful practitioner of the newfangled profession of ranch manager, a specialty which has grown in Texas with the decline in residential family ranching. From his home spread at Goliad, Buddy manages ranch properties, including a couple more of his own, stretching some 500 miles from Matagorda Island in the Gulf of Mexico to the Davis Mountains in the Big Bend country west of the Pecos.

"And here at El Chapote," he had said the previous evening over a T-bone at the café in Laredo, "is the hardest, roughest country in the world to ranch."

For one thing, you have to maintain sturdy fences to keep those cattle well back from the river. Down there —beyond the lower perimeter of a 9,000-acre pasture they call Santo Tomas after the big creek that runs through it to the river—is the buffer zone, where the fever ticks might be. It was set up by the government in 1941 as a barrier against strays from Mexico which might be carrying ticks, and extends from the Gulf 500 miles upriver to Amistad Dam just above Del Rio, Texas. Inspectors from the Department of Agriculture, called "tick riders," patrol it constantly.

The fever ticks in this area are mainly of a species called *Boophilus annulatus*. They carry blood parasites which, in cattle, can cause Texas cattle fever.

The herds that went north in the great cattle drives carried and scattered the infectious ticks wherever they went. Before the start of the eradication program in 1906, Texas fever was costing the U.S. cattle industry losses of $40 million annually.

When ticks turn up, the rancher must dip his cattle, move them to safe pasture, then continue to dip them until they have been tick-free through two inspections.

Since a host is essential to the life cycle of the fever tick, the only cure for an infected pasture is to vacate it for nine months, during which time, in the absence of hosts, the ticks and their eggs will die. Nine months of downtime is a sorry visitation upon a rancher who must keep up installments at the bank and pay for all that extra labor, unbudgeted trucking and maybe some pasture rental to boot.

Buddy Wheelis owns three ranches, manages others from Gulf of Mexico across South Texas to Big Bend.

Buddy Wheelis would long remember 1965, the year of the last previous infestation at El Chapote. Rustlers had made off with a few head of cattle with Chapote's own Wrench-L brand. These turned up in a village just across the river where the culprits had the misfortune to get caught. Trying to be neighborly, the Mexican authorities immediately returned the cattle the way they had come, which was wet, but by then El Chapote had ticks. The downtime cost $150,000.

Curiously, while fever ticks love cattle and tolerate horses, they do not seem to relish hitching long rides on just any animal that happens to mosey by, and so a vacated pasture will indeed cleanse itself. But let a gully washer come, say the ranchers, and fever ticks will queue up to book passage on floating twigs.

And so, on that Monday morning, as the helicopters landed, Buddy found himself thinking about the mixed blessing of the recent rains and how the swollen Rio Grande had floated up all that drift brush. Had any of it backwashed into Santo Tomas Creek?

While the choppers were being refueled, the hands piled into crew-cab pickups and headed out. The trucks were pulling the horse trailers which served as a portable remuda for remounts.

Buddy hunkered down with the pilots to sketch in the dust the run of the ravines, the lay of the land.

Operating from rear, helicopter herds cattle into pens and mounted cowboys work them for loading.

Then he walked over to the doorless Hotel Bravo, folded his lean six-foot frame into the passenger's seat, fastened his safety belt, and gave Frank James the high sign. Seconds later, Jerry Lee was airborne too.

The steers down in the Santo Tomas pasture, about which Buddy had his apprehensions, would be rounded up in a later phase. The first sortie would be to the north, over the immobile ocean of mesquite- and brush-covered hills and plateaus interlaced by gullies and dry arroyos.

On horseback it is pure hell to work an area like that. Twenty feet away there could be a dozen steers lying in a thicket and you might never see them, let alone be able to push through the cat's-claw to get at them. But from the air, there they are, plain as day.

At the center of the target range in this first phase of the roundup was a plateau, some four miles from the ranch headquarters. The plateau is fenced and is what ranchers call a trap. All that cattle know about a trap is that once they get inside they druther be somewheres else, and they'll bust out if they can.

Traps, about an acre in size, are open at one end. They can be closed swiftly once the cattle are in. They are on high ground, to give the cowboys on horseback a reference point in case they have to chase a stray. Nearby are the waiting and turn-around areas for the big trailer rigs which arrive and depart on the *senderos,* narrow trails crisscrossing the range.

The traps funnel cattle into pens and ultimately to a main chute with its three-way cutting gate that can be worked to accommodate one animal at a time. The gate opens forward to the loading ramp for the trucks. To either side are entrances to holding pens where the cattle can be segregated by ownership or by weight. Here Fred Pierdolla's branded steers would go thisaway to the right, and Joe Solomon's thataway to the left if they needed more grass time. The ones deemed suitable for feeder cattle at Yuma would scramble straight ahead. It is a bawling, iron-banging business.

The rowdiest activity, however, was out there on the range, or above it, in the ever-narrowing circles of thin air, in a kind of aerial choreography that could almost have been performed to the Aaron Copland music for *Rodeo.* The helicopters were bringing in those cattle, come-a-fly-fly-yippee-fly-yay!

On the first sortie they backed and filled, buzzed and flapped, hovered and plunged. Never were aerial acrobatics more dazzlingly performed for a less appreciative audience than those slow-moseying steers.

When a column of cattle took a notion to gee that broke pattern, the choppers would make them haw. Now and then a maverick would set out for somewhere on his own and when they tried to veer him back he'd stop and glare up and paw the earth. One of the 'copters would zoom in then, and flail him with dust and downdraft. If that failed, Buddy or Bud Williams or whoever was riding shotgun would lean out and sting him with a pistol loaded with the tiny leaden flakes called ratshot. It generally got results.

From up above, it was a fascinating sight to see those trickles of cattle converging along the little browse paths they had worn, becoming slow rivers of bovines in all colors and markings; javelinas, the wild boars, now and then scurrying along with them and then darting off into the huisache and black-bush; and an antlered deer hightailing it and clearing the clumps of prickly pear in great bouncing leaps.

Troublemakers from the neighboring ranch, the dread Texas fever ticks, are displayed in glass vial.

Here, *Boophilus annulatus* is magnified 20 times.
Last feast—blood of El Chapote steer—bloats the tick.
Cattle and their transports which left the ranch before tick discovery had to be tracked and treated.

They brought in the steers, in bunches of about 500. Whenever a trap filled the cowboys would close it and "hooraw" the cattle down toward the chute.

The trucks were arriving, lining up on the long slope to the mesa, waiting their turns to back in and load. So far, 55 of the 18-wheelers had been ordered.

The first trucker took on 65 steers, about 46,000 pounds on the hoof. This time tomorrow he'd have them in Yuma. That day, they loaded and dispatched 11 trucks, 700 head. It went like Swiss watchworks.

Joe Solomon had arrived from his place at Thermal, California, just out of Palm Springs. He was bareheaded, in a tailored leisure getup, and he cast an appreciative eye at the great vistas of vegetation on which his steers had fared so well. He was thinking of the future herds that El Chapote could accommodate.

"This is the greatest spectacle I've ever seen," he said. "I mean, the speed and dispatch with which they can take a thousand cattle and round them up in just a matter of minutes—imagine how much riding would be needed if you had to do all this on horseback! And this way, the cattle get stressed a lot less."

That night, outside, you could see every star in the heavens, and understand the things that turned so many of those lonely old drovers into minstrels and poets. The coyotes were silent.

Tuesday morning the roundup moved to a new location for the second phase of the operation. The helicopters were working out east, bringing in the first sweepings, several hundred head.

The third phase, possibly on Wednesday, would take place in the Santo Tomas pasture, nearest the Rio Grande and the tick buffer zone. Buddy was saving it for last. He was still having premonitions.

Meanwhile, wheeling into the big parking area in front of the cookshack, was a U.S. Department of Agriculture pickup, towing a trailer with pesticide-spraying equipment. It brought tick riders, who came with dire news from a totally unexpected quarter.

One of the inspectors, Jimmy English, had been checking around on the ranch adjoining the east boundary from whence some of the morning's sweepings had come. He had scratched the neighbor's cattle and found fever ticks. He had them in a bottle.

This required that El Chapote, as land adjoining an infested area, go under secondary quarantine. Every steer would have to be examined. If no ticks were

found, the situation would not be too serious. But as a precaution, every steer would have to be taken to the Tick Eradication Center in Laredo and dipped.

The center would provide the dip and its facilities without cost, but the labor, transport and time loss were the responsibility of the ranch and the owners of the cattle. A meeting was held. There were long faces as Buddy, Fred Pierdolla, Joe Solomon and the Department of Agriculture people discussed the ramifications.

By and by, Robert D. Marshall, the supervisor of the Webb County Tick Eradication Center, quietly excused himself and went outside while the talk continued. He walked back to pens now filling with cattle.

After some minutes he rejoined the group and said he had scratched under the left hindquarter of one of the steers. He had something to show them. It was a small, brownish, beadlike insect. It was *Boophilus annulatus,* a fever tick, swollen from its feast.

"Gentlemen," he said, "I am sorry."

"Funny," Buddy Wheelis said later, "we had expected the trouble, if it ever happened again, to come at us from the river. Instead, it snuck under the back fence."

The ramifications were spinning off in all directions. All cattle from El Chapote, including those that had already left for Yuma, went under full quarantine, and also the rangeland, fence line to fence line.

The steers would have to undergo three dippings in successive weeks, and pass the accompanying inspections. Arrangements would have to be made to put the herd on clean ground somewhere, after the first dipping. If there were insufficient browse and forage on the new turf, feed would have to be provided.

When the trucks reached Yuma, the steers would have to be inspected, dipped and penned off to themselves, the trucks hosed down with a strong pesticide.

Joe Solomon had to try to call off the trucking outfits he had engaged, and compensate any trucks that showed up and had to leave empty. A lot of extra load-miles would have to be run—to other rangelands, to dipping facilities—before the crisis would be resolved.

For Buddy Wheelis, the problems would be enormous. El Chapote would have to be vacated, all 89 square miles of it, and lie dormant for the required nine months. This would entail heaven-only-knows how many days and weeks of poking into mesquite thickets and patches of scrub brush, and gullies and arroyos to gather the strays. He'd have to overhaul the ranch's dipping vats, unused since the 1965 infestation, to save the labor costs of taking dribs and drabs of cattle to vats in town. Time and again the helicopters would have to be brought back for aerial surveys.

That Tuesday, the sun burned hot and the unrelenting wind filled the air with a stinging dust. All afternoon the tick riders worked at the chute with painstaking thoroughness, probing and finger-scratching each steer in the tender underside places where fever ticks like to dig in. Tempers were short.

But somehow, on that and the succeeding days, everything got attended to, the steers dipped and trucked to Buddy's ranches at Goliad and Beeville.

Joe Solomon, back in California, reckoned his and his partner's losses at $75,000 to $100,000.

Buddy guessed that the ranch would lose about $200,000 in extra labor costs, helicopter hire, and downtime on the range.

The tick riders found no more of *Boophilus annulatus,* not even among the steers from Santo Tomas pasture about which Buddy had had his premonition.

"One lousy little tick!" said Joe Solomon. "Well, no biz like beef biz."

Department of Agriculture "tick rider" reaches into chute to chalk steer which passed first inspection.

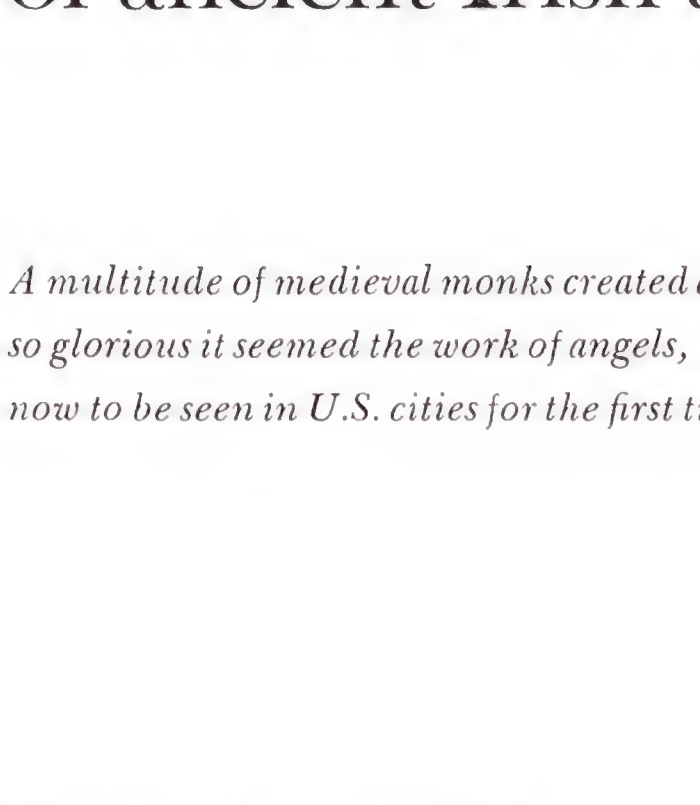
Swimming for dear life, El Chapote cattle undergo one of several dips at the Eradication Center vat.

Photographs of pages from *Book of Kells*
courtesy of The Board of Trinity College, Dublin

*By Alfred Friendly*

# Great *Book of Kells* in shining exhibit of ancient Irish art

*A multitude of medieval monks created a book so glorious it seemed the work of angels, now to be seen in U.S. cities for the first time*



Chi-Rho page in Book of Matthew. The monogram of the Greek form of Christ's name, always the first two letters (XP), is the strangest of pages in mysterious *Book of Kells.* Except for two words in Latin, beginning the story of the birth of Christ (Matthew 1:18), page is pure decoration, a frenzy of spirals and tiny interlacings of birds, animals, some humans and three angels in an overall profusion. Of rare beauty, it is known as the Monogram Page.

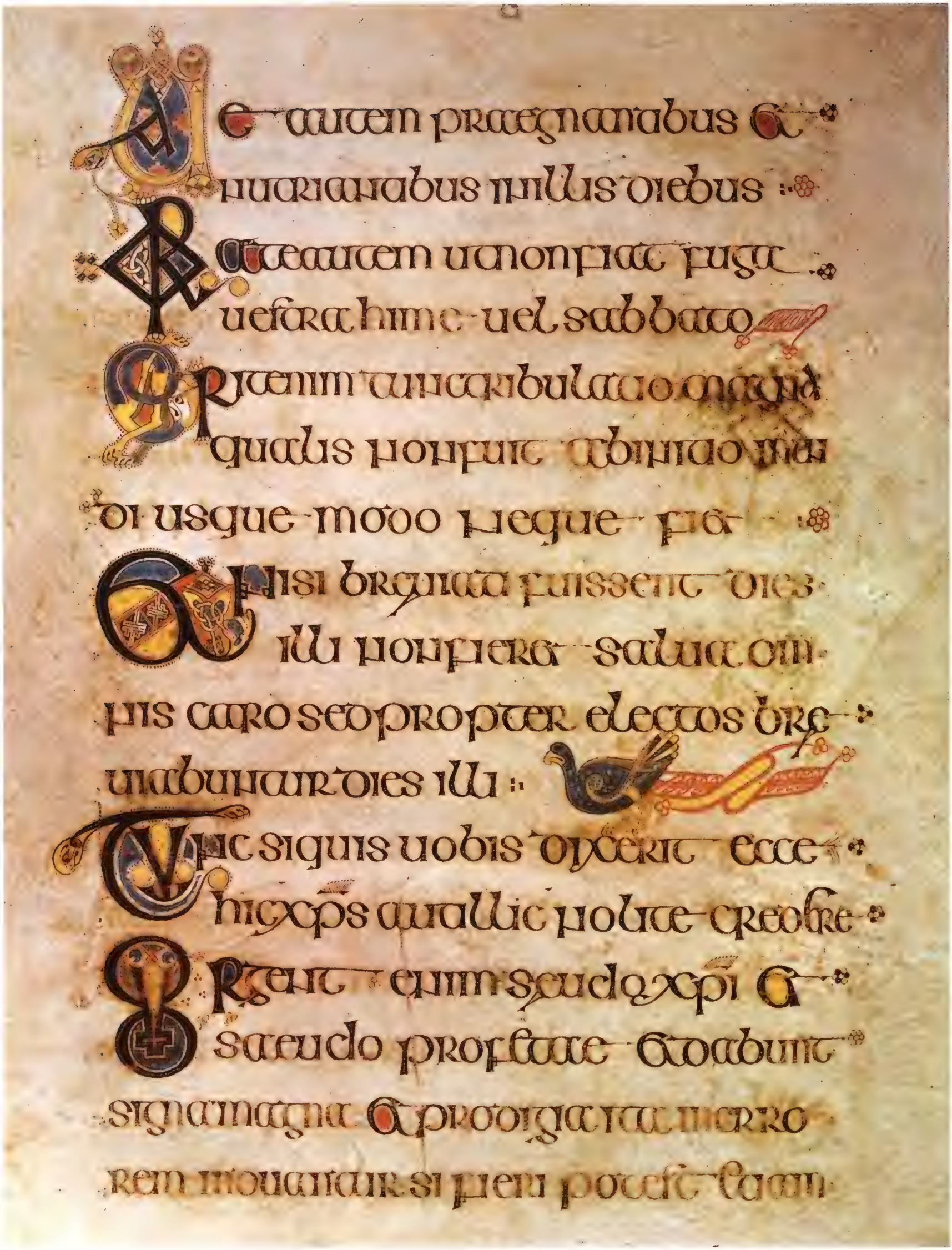
"Here you may see the face of majesty, divinely drawn, here the mystic symbols of the Evangelists. . . . Fine craftsmanship is all about you, but you might not notice it. Look more keenly at it and you will penetrate to the very shrine of art. You will make out intricacies, so delicate and subtle, so exact and vivid, that you might say that all this was the work of an angel, and not of a man."

The writer was the medieval Norman-Welsh historian Giraldus Cambrensis (c. 1146-1223) and what he might well have been describing is a masterpiece produced 400 years before his time, the *Book of Kells.* A modern art historian, Bruce Arnold, calls it "the supreme achievement of Irish Celtic art." Kenneth Clark (SMITHSONIAN, August 1977) calls its ornamental pages "almost the richest and most complicated pieces of abstract decoration ever produced, more sophisticated and refined than anything in Islamic art."

Its first viewers, eighth- and ninth-century Irish monks to whom it was probably displayed on occasions of great solemnity and festivity, regarded it as magic. So also will anyone who sees it today, so compelling is its artistry, its lavishness, its grandeur and the profound sense of mystery surrounding it. How, one asks, could such a joyful, wildly colorful, explosively imaginative volume have ever emerged from the cold Celtic mists, from the gloom of the Dark Ages?

For the very first time in America, viewers in five cities will be able to see the *Book of Kells,* the pearl in the crown of an exhibition of Irish art treasures from the Bronze Age to the 15th century. It will open

*Alfred Friendly relied heavily for background on the Thames and Hudson volume,* The Book of Kells, *London, 1974, published in this country by Alfred A. Knopf, New York, 1974. His latest article was about Sir Francis Beaufort* (SMITHSONIAN, *August 1977).*



A page of text, Matthew 24: 19-24, wherein Jesus foretells the events and trials of the last days. Typically, the fanciful decorative illuminations have little, if any, bearing on what is described in the text.

From Gospel of St. Luke, two highly imaginative beasts, locked in sinuous combat, form decorated initial D.

at the Metropolitan Museum in New York on the 15th of this month, remaining there until January 15, 1978, and then will be shown in San Francisco, Pittsburgh, Boston and Philadelphia, for approximately three months in each city.

Included also are such magnificent pieces as the intricately wrought eighth-century Ardagh Chalice of gold, glass, silver, enamel and bronze gilt, the most perfectly preserved such object of any origin surviving from the Middle Ages, and the equally superb Tara Brooch (both p. 73) of silver, gold, bronze, copper, glass and amber, from a period perhaps 50 or 75 years earlier than that of the *Book of Kells.*

The *Book of Kells* is the most breathtaking item in the exhibition. It consists of the four Gospels and certain other preliminaries—canon tables, introductions, summaries and Hebrew name lists—usual to volumes of the kind at the time of its creation, about A.D. 800 or somewhat before. It is by no means the earliest of these decorated manuscripts of Celtic monasteries in Ireland, Scotland and England. Many of these so-called "Insular" manuscripts preceded it as, for example, the magnificent *Book of Durrow* (Ireland) dating

Detail from elaborated page in Gospel of St. Matthew. Grotesque figure forms the initial *Q* of *Qui,* "Who."

A comparatively (for *Book of Kells*) simplified and formalized portrait of Christ in the Book of Matthew. The peacocks are symbols of Christ; winged figures probably depict four archangels.

from about 670 and the equally glorious *Lindisfarne Gospels* (from the monastery on Holy Island off the Northumberland coast) completed in the early eighth century. But the *Book of Kells* is the largest, the most ebulliently decorated and the finest of the genre.

It now consists of 340 folios (double-page spreads, thus constituting 680 pages) averaging 13 by 9½ inches; originally, before it was badly clipped by some ancient binder, the pages were probably an inch or so larger in each dimension. It is known to have been in the monastery of Kells, a great medieval religious center 37 miles northwest of Dublin, at the beginning of the 11th century when there was a report of its theft for the sake of its wrought-gold binding. It was found months later, its cover wrenched off and with it probably several of its pages. From missing portions of its text it can be estimated that it originally consisted of about 370 folios.

It remained at Kells until the middle of the 17th century when Cromwell's cavalry was quartered in the church and the governor of the town sent it to Dublin for safety. A few years later it was presented to Trinity College Library where it has since remained.

Initially it was bound in one giant volume. In 1953 it was rebound into four volumes, each roughly corresponding to the four Gospels. Of these, the second, Mark, and the fourth, John, are included in the American exhibition.

### *Its origin a mystery*

Its origin remains a matter of conjecture—whether it was written in the mother of the northern monasteries on the island of Iona, off the west coast of Scotland, founded by the Irish Saint Columba (the most widely accepted view), or at Kells itself, at Lindisfarne or some other English or Pictish (Scottish) monastery is arguable.

Mlle. Françoise Henry, an authority on the Insular decorated manuscripts, distinguishes three scribes who wrote the text, in majuscule Latin letters in the so-called "Irish script" and using a mixture of St. Jerome's *Vulgate* and earlier Latin texts. They committed more than a fair share, even for the time, of mistakes and omissions, a failing that did not seem to bother them overly; after all, the volume was kept in a monastery sacristy for altar display on special ceremonial occasions, a book of beauty to be hallowed for itself.

The scribes carefully left space for the illustrators around the margins for initial letters and—what is particularly delightful—for embellishments within the 17 to 19 lines of text on each page. It is thus full of a number of conceits. Mlle. Henry points out, for example, that a scribe would write above a word a letter that he had omitted, not because he had for-

National Museum of Ireland, Dublin

The four symbols of the evangelists. Conception comes from vision of Ezekiel of a cloud of fire containing four figures, each with face of a man but also appearing as a lion, ox and eagle. Matthew was identified with man (upper left); Mark as lion (upper right); Luke as calf (lower left); John as eagle (lower right). The figures were also interpreted as four stages in the life of Christ.

gotten to set it down originally or because he had insufficient space in the line, but because the addition would constitute an ornament and indeed an excuse for an embellishment, in the form of a little animal curled around the superscribed letter.

Also, the scribes made a game or feat of ingenuity by the use of what is called "turn-in-the-path" or "head-under-the-wing," occasionally indicating the ends of lines not with a conventional sign but by crowds of little figures or animals, sometimes gesticulating to the reader where he should next turn his eye. The figure at the end of the fourth line (p. 68) is perhaps of this category. Note also the little flower or clonelike designs at the end of more than half of the total lines on the page, suggesting that the scribe could not bear to leave a margin without some sort of joyful decoration.

While the scribes worked on setting down the text, additional sheets of vellum were handed out to various artists in the scriptorium for full-page illustrations, to be assembled at the proper places in the completed work. These are the great glories of the *Book*: introductory pages to each of the four Gospels with

National Museum of Ireland, Dublin

Termed the finest example of Irish metalwork of the early Christian period, the early eighth-century Ardagh Chalice was found about a hundred years ago by a youth digging in a Limerick potato field.

Tara Brooch (enlarged detail at left) has no connection with seat of the High Kings of Ireland. Its decorative devices parallel *Book of Kells*. Photographs on these pages are by Lee Boltin.

Literally decorated in the round, the bottom of the chalice is as carefully and skillfully made as visible parts; altogether a triumph of design and use of precious metals, glass and enamel.

portraits of the Evangelists; opening pages to each section with fantastically conceived winged "beasts" that symbolized the four authors, a man for Matthew, a lion for Mark, a calf for Luke and an eagle for John. Other fully illustrated pages include three illustrations of the life of Christ, the Incipits (illuminated text pages at the beginning of each Gospel), the "carpet page," the Chi-Rho page (p. 66), six additional pages of illustrated text and the canon-table arches.

The pigments used by the artists were of vegetable, animal and mineral origin. Curiously, no gold was employed, although there was gold to be had in Ireland; a bright yellow of orpiment (arsenic trisulfide) was used instead. More amazing still, the ultramarine came from lapis lazuli, the source of which (until the secret of its preparation as pigment came to Europe in the 12th century) could not have been closer than Afghanistan. It would have been as costly as gold.

In the full-page illuminations, in the portraits, the depictions of Christ's arrest and the temptation at the pinnacle of the temple, and in the borders and the initial letters, the intricacy of the decoration staggers the viewer—the spirals, interlacings, arabesques, convoluted floral designs and grotesque human and animal figures entwined therein.

The full complexity of the patterns, the miniaturization and the fineness of line and color discrimination can be appreciated only under a magnifying glass. Yet, as far as is known, the magnifying glass was not invented until the Renaissance. It has even been suggested that the artist of one or more of the pages must have been nearsighted—for his work, a benign optical defect that was itself a magnifier.

The portraits, the episodes in Jesus' life, the "beasts" of the Evangelists, the representation of angels, were standard subjects of religious illustrations since earliest Christian times. So, too, some of the other smaller illustrations are widely known in Christian iconography: the cross, of course; the peacock as the symbol of Christ; the fish as the acronym (ICTHYS) of the Greek for "Jesus Christ, Son of God, Savior"; human figures in reverential pose; snakes, thought of not as symbols of evil but, since they shed their skins, of resurrection; and perhaps even some birds and animals feeding on fruit as metaphors for Christian's partaking of the Eucharist.

But from figures of deep reverence and religious symbolism, one turns to a welter of border decorations and insertions in the text that appear not merely secular but wildly pagan; many are downright hilarious.

What is one to make of these endless anthropoid, floral, faunal, geometrical and superimaginary monsters? The simplest explanation is that they must have derived from the sheer exuberance and playful imaginations of the artists. Yet would a group of Celtic monks, laboring in stony, hermetic retreats, dealing with the most reverential of all texts, and themselves totally dedicated to prayer, poverty and the glorification of God, have been inclined to playfulness and a delight in nonsensicality? Would they have drawn so much as one line without a holy purpose in mind? The more one studies the pages, the more one is mystified.

There are few depictions and decorations in the *Book of Kells* that do not appear at one place or another in other Insular manuscripts. The distinction of the *Book of Kells* is their sophistication and abundance, their greater elaboration and, above all, the emphasis on human figures portrayed both reverentially and in ornamental, often humorous contortions.

The problem for the art historians is the identification of the sources from which those illustrations derive. Some are obvious: early Christian pictures and manuscripts found their way to Iona and its daughter monasteries from Christian enclaves in England dating from the Roman occupation, while others came from Rome. Some scholars profess to see Coptic, Byzantine and even pre-Christian Egyptian influences. Depiction of animals in carvings and metalwork was common to the Irish art from early days, and the fanciful spiral ornamentation seen on the Chi-Rho page can be found in Irish and Celtic art as far back as the Iron Age. Even so, there are elements in the Insular manuscripts and particularly in the *Book of Kells* that seem unique, as if from another world.

In its totality, the *Book of Kells* stands to Celtic art as Chartres to Gothic cathedrals or the Sistine Chapel to Renaissance painting: epitome and climax.

The galleried, serene library of Trinity College, Dublin, home of *Book of Kells* since the 17th century.

Mark Jacobson, 19, finished George Washington University and works toward a PhD in statistics at Stanford. He is a baseball nut, wears an old Washington Senators cap.

Paul Dietz, 18, graduated from Johns Hopkins and is going for his PhD in computer science at Cornell. He solved a major computing problem at the age of 15.

Colin Camerer entered Hopkins at 14. Now 17, he's at University of Chicago for a doctorate in economics and a master's in business administration. He likes journalism, has tried his hand at reporting and feature writing.

Eric Jablow, 15, youngest of this year's special grads, aims for Princeton PhD in math after seeing Israel.

*By David Nevin*

# Young prodigies take off under special program

*Bearing the strange stigma of precocity, seven 1977 college graduates, all teen-agers, zoom on with Johns Hopkins guidance*

*Free-lancer Nevin wrote about U.S. collegians in Romania (*SMITHSONIAN, *September 1975). His book on Micronesia was published by Norton in May.*

Eugene Stark, 18, finished Hopkins, chose MIT out of five prestigious universities that wanted him to work on a PhD in computer science. He hopes to continue playing the trombone with small groups.

Robert Addison, 19, finished Hopkins, is getting a master's while earning a good salary correlating satellite data for computer science firm. He spends about half his on-the-job time at the Goddard Space Center.

Michael Kotschenreuther, 18, entered Hopkins from the ninth grade. He studied theoretical physics and is after a PhD in the same at Princeton. He is the only one of the group to have given a paper—it was on quarks

The cabbies resolutely refused the long trip from Manhattan to Brooklyn until one came along who lived there. Sam Jablow and I settled in for the ride to Jablow's house to talk to his son Eric.

Eric Jablow was going off to college, to graduate school. This is not so unusual when the leaves are turning and school-crossing guards are polishing their badges, but Eric Jablow is an unusual student. He has a new baccalaureate degree—summa cum laude; a National Science Foundation Graduate Fellowship to support his work on a doctoral thesis; and a downright eager welcome from Princeton University. All this flows from the fact that Eric Jablow shows great promise of becoming an outstanding mathematician. What makes him different—beyond this—is that he has just turned 15.

Naturally he is excited about going to Princeton (he was offered scholarships at Harvard and Yale, among others). "Yes, yes," he says in his characteristically testy manner, impatient at intellects that stumble along behind his own, "certainly Princeton is very attractive. No doubt there is much to be learned there." He is the youngest graduate in the 130-year history of the New York City public higher education system, having entered Brooklyn College from the sixth grade; he is also the youngest doctoral candidate in Princeton's history.

Bright kids often find themselves out of sync with their contemporaries, teachers and curricula. Their minds range ahead to ideas which their teachers know about only vaguely, if that, and which most of their fellow students will never entertain.

To spare such youngsters and reach them systematically, Julian C. Stanley, a 59-year-old psychology professor at the Johns Hopkins University in Baltimore, began an academic program in 1971 to focus on those who were precocious in mathematical reasoning, an ability that is relatively easy to measure. Since his program, known as the Study of Mathematically Precocious Youth (SMPY), began its talent search six years ago, 3,500 youths have been tested; some 3,000 have shown excellent math reasoning ability.

Stanley, a gaunt, quiet Georgian, found that perhaps five percent of the youngsters in the United States had enough mathematical reasoning ability to deserve some special facilitation. One percent of them cried out for a great deal of it. A top fraction of that one percent, if sent to college early, could do truly remarkable work.

By last spring, approximately 100 unusually young students who had been connected with Stanley's program in one way or another were enrolled in various colleges; 26 of them, including seven girls, were getting their educational acceleration at Hopkins. Last June, five of the 26, along with two other youngsters in the SMPY program attending colleges elsewhere, graduated. Six of the seven are going on to sought-after graduate schools, five with coveted three-year National Science Foundation fellowships for advanced

*Photographs by Yoichi R. Okamoto*

Kotschenreuther spent summer as a tutor and also worked in his dad's ice-cream shop, but volunteers that he finds "not much intellectual engagement over an ice-cream cone."

graduate study. This is the class of which Eric Jablow, who entered college at 11, is a part. (He and the other six appear on pages 76-77.)

The world seems to be their oyster. All say they are happy and excited about the future. All feel they have profited by going to college early; none, in retrospect, would have done otherwise. Yet there is still the widely prevalent but false assumption that educational acceleration is bad for students, that it robs them of a precious part of their lives and may damage them as well.

William James Sidis was enrolled in Harvard University at the age of 11 in 1909. Before he was 12 he had delivered a lecture on higher mathematics that drew waves of national publicity. From that high point he went steadily downward, and though he managed to graduate, almost none of his great promise was realized. After serving time in prison and one low-paying job after another, he died at 46, a poverty-stricken misanthrope.

*"Sidis fallacy" shortchanged prodigies*

Everyone blamed his acceleration in school, and for decades the idea of pushing gifted youngsters ahead had a bad name. Modern psychological studies suggest that Sidis' problems flowed mainly from his relations with his family, in particular an exploitative, unloving father, but the "Sidis fallacy" is thought to explain why so little attention has been given to the needs and problems of high achievers over the years.

Most of the seven students in this graduating class received some special facilitation from their elementary and high schools, but far less than they actually needed. Several even met serious obstacles. It was to overcome these obstacles that Stanley, who has a bent for testing and statistics, began his work at Hopkins.

Most of Stanley's previous work had been with adults, but in 1968 a local Baltimore youngster named Joseph Bates succeeded so brilliantly in a summer computer course that Stanley gave him a battery of tests. Bates scored startlingly high, and Stanley had him admitted to Hopkins from the eighth grade in the fall of 1969. Now 21, he has nearly finished his PhD at Cornell.

The following year another 13-year-old with comparable intellectual abilities also entered Hopkins. Stanley had a hunch there were many more like these two awaiting discovery. With a grant from the Spencer Foundation, a behavioral science research organization in Chicago, he put together SMPY and began volume testing of seventh and eighth graders.

The first SMPY tests, which included the mathematical section of the Scholastic Aptitude Test normally given to college-bound high school students, were administered to students in the Baltimore area; then the program was expanded. Those students scor-

Camerer, the closest to an "all-rounder," played varsity golf at Hopkins, worked on a paper in summer.

Addison took up bridge in 1976, already has 40 points toward the 300 of a Life Master.

ing in the top two or three percent of their age group on a standard mathematical aptitude test are eligible to enter the SMPY contest.

The Study counsels youngsters, their parents and, when they are interested, their schools, but it recommends various forms of acceleration only for those highly able youths who are, themselves, eager to move ahead faster than the usual age-in-grade lockstep. For a time it offered special courses to let students quickly complete the precalculus mathematics—Algebra I through analytical geometry—normally a four-and-a-half-year process.

"We find that about one percent of the seventh graders in the nation are genuinely gifted in math and science," says Stanley, "and that most of them are hardly aware of it. Think of that. Presumably it means that there are gifted youngsters everywhere." And, indeed, a similar math-facilitation program, the largest in the nation next to Hopkins, now exists in Minnesota, with others springing up in Illinois, Indiana, Michigan and Oklahoma.

One striking result of the SMPY testing is that boys score much higher in mathematical reasoning ability than girls, which may be why these seven are all males. Since a biological explanation is unlikely, a number of investigators, Stanley included, believe that social influences and sex-role stereotyping are largely responsible. Careers in science and math are seen, incorrectly and unfairly, as more open to men than women. Studies are now being conducted by another Hopkins professor, Lynn H. Fox, on the causes for these sex differences in mathematical reasoning ability and achievement, and how to minimize them.

But the Study is not an action program. Stanley advises precocious students in his program—whether on the Hopkins campus, or at any other universities they may attend—but they are on their own. They take no courses from him and are in no way a formally structured group. They hardly know each other except when their class schedules coincide. They are just students—younger and brighter than most. Some of their uncles like to wonder aloud if the boy isn't missing the best years, those golden high school days of football and cheerleaders and proms.

Probably not. These graduates are interesting and vary greatly, but none seems to find precocity uncomfortable. Talking to them is a curious experience of dissonances and contradictions. All have surprisingly mature thought processes, yet they are still teenagers, with many of the attitudes and reactions of high school juniors. They switch from man to boy to man again and conversation with them lurches.

All seven seem to have supportive parents and some are even quite close to them. Mark Jacobson who, with Eric Jablow, attended colleges other than Hopkins as undergraduates, says his only connection with Stanley had been through his father, who had sought out the professor for information about precocity.

Sam Jablow tends his gifted son with a loving combination of control, shelter and freedom that allows him to run and leap on fields he himself will never

Program director Stanley, seen with Stark and Dietz, says their ability shows up in their "pencil work."

know. Eric Jablow, like Sidis, entered college at 11, but his father has been determined that his son *not* be exploited. For four years there was no publicity about Eric; he fitted quietly, as well as any 11-year-old could, into college life. Brooklyn College was close to home, and Eric's grandmother lived across the street from the campus and could give him milk and cookies between calculus sessions.

Several of the seven had, occasionally, talented teachers who recognized their ability and helped them along, but these were high points in an otherwise unrelieved plain of despairing boredom. Acceleration certainly has some emotional hazards, but the hazards of staying behind seem even greater. Some public schoolteachers seem to find gifted children a bother.

Faced with such teachers, gifted children often turn off or become rebellious. Colin Camerer, whose interests are thus far the most diverse of the seven, withdrew so completely on one occasion that his junior high science teacher considered him distinctly mediocre and was astounded to learn that he was being considered for acceleration. Mark Jacobson, a tall, skinny, red-haired boy with a deep and authoritative voice, remembers "long periods of boredom in school" as his only bad memories. Jablow's teachers thought he had too many books: he was learning too much.

*Too young for serious dating*

Academically, the boys all did well in college; socially, they were less adept but not unsuccessful. They didn't date until they were about 16 and then chose girls about their age. A couple of them admit to going steady, cringing at the term's antiquity. Gene Stark dismisses the matter neatly: "It's too early for seriousness with girls to be a valid question."

All the same, joyousness does not exactly describe them. Michael Kotschenreuther, a slight and somewhat withdrawn young man who has been ill a good part of his life, is so talented in theoretical physics that he looks forward to graduate school at Princeton as the first place that he is likely to meet his real peers. He says soberly that all he missed by going early to college was "a lot of pointless fun."

Jablow, the youngest and by far the most precocious of the group, has been the one most excluded from normal relationships with friends. Without warning, he blurts out angrily, "If I offend people just by existing, that is not my fault."

The boys may also share a certain subtle constriction of spirit. They can hardly remember even trivial disappointments. Again, only Jablow seems to understand or have experienced failure. "Well," he says, "I don't have that many friends in the neighborhood," and his expression confirms his sense of failure.

There seems little about them that is spontaneous. They and those close to them have devoted so much time to plotting their careers and courses that they seem just to move along on schedule toward their targets—a PhD degree and high-level research. "Oh," says Gene Stark, who is by far the most goal-oriented, "if I wanted to do something different, I could fit it into my program with no problem."

But, alas, they don't want to do something different, although Kotschenreuther burns to discover something "that hasn't been known before." They are teen-agers, after all, but ideas of going to sea, dogsledding over the Pole, working a wildcat oil rig, walking across Spain, do not move them much. Instead they want to get ahead in their professions, not so much for money or fame but because it is only in areas of the intellect that they are truly at home.

Dietz loves war games, reenacts World War II campaigns on a sand table he constructed.

Jablow, a radio ham, fiddles with his set. He started calculus at seven, reads French, German.

Stretching mightily for a Frisbee on Johns Hopkins campus, Stark looks like any American college youngster. He isn't.

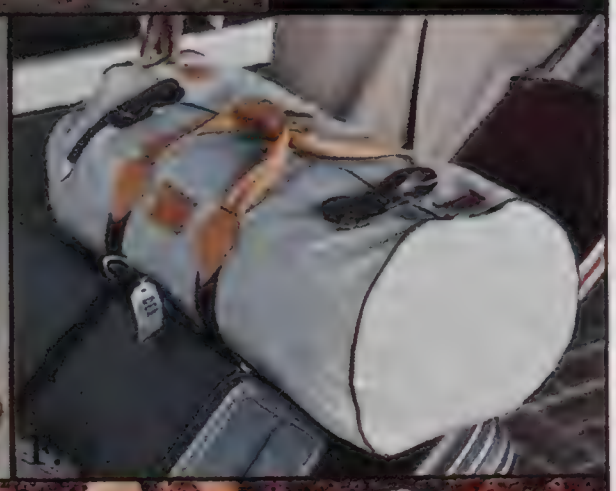
# "ESCAPE from the ordinary"®

A.

B.

C.

E.


F.

G.

**A.** Classic, hand-loomed lambswool ties from Scotland. Hand-cut to a fashionable 4″ width, so you can be sure they'll stay in style for years to come. Solid colors of brown, burgundy and navy will take you anywhere in good taste. Silk tipped, 57″ long. **No. 9348H... $10.50** ea.

**B.** Easy-care turtlenecks in a practical blend of 50% super-fine cotton and 50% long-wearing polyester. An ideal travel accessory, in navy, brown, white, red and light blue. S, M, L, XL to fit men's 34-48; women's 8-18. (Men's, **8830H**); (Women's, **8839H**)... **$12.00.**

**C.** The Cushioner... a genuine shearling lambskin pillow with soft, natural fleece inside and out. Functional, practical, and extremely good looking. Patchwork design with side panels using coffee brown fleece and tan leather squares. 16″x16″x6½″. **No. 9132H...$30.00.**

**"You be the Judge™" Guarantee.**

When we say "You be the Judge™" we mean just that. Every product you purchase from Norm Thompson must live up to YOUR expectations, not ours. If at any time a product fails to satisfy you, return it to us, postage prepaid, and we'll either replace the item or refund your money in full... whichever you wish.

This is definitely not a 2-week guarantee.It's good for the normal life of the product. (You being the judge of what that normal life should be.) We'll stand behind everything we sell to the fullest extent... no ifs, ands, or buts!

**D.** The Crescent... meticulously handcrafted from supple, glove-soft cowhide by Coach®. Features a generous main compartment and an adjustable shoulder strap accented by two solid brass buckles. Colors: Saddle (shown), mocha, rust, black. 11″x10″x3″. **No. 3240H...$55.00.**

**E.** The Harness belt... precision crafted by Coach® and sold only by us. Heavy duty stitching joins two plies of tough harness leather which is complemented by a solid brass buckle. Color: Rich, golden tan, 1½″ wide. Even waist sizes 30-42. **No. 248H... $12.50.**

**F.** Our Shikari Bag is indispensable for packing extra gear and tough enough to take all kinds of abuse. Made of 100% cotton canvas ...strong, yet lightweight. 27″ long with two zippered compartments and leather carrying handles. 13″ diameter. **No. 144H...$27.50.**

**G.** A genuine long fleece sheepskin rug... soft, warm and luxurious. Great for bathrooms or next to your bed. Drape one over a trunk, cover your office chair, or make an attractive wall hanging. Color: Natural shades of white. **No. 9110H... $38.50.**

## ORDER TOLL FREE
## 1-800-547-1160

ORDER FORM INSIDE

*Fast and efficient... the Shikari Grill cooks just about anything.*

**Norm Thompson**

# Norm Thompson

**H. Six pages from your daily newspaper can cook a steak to perfection in less than six minutes.** The Shikari Grill . . . completely portable and you'll never spend another penny on fuel. There's no charcoal or lighter fluid to mess with, no waiting for coals to glow. Just crumple newspaper into a ball, light a match, and instantly you're cooking. (The Shikari Grill works on the principle of controlled combustion. Natural fat dripping over charred paper keeps the fire going.) Great for a summer picnic at the beach, a winter barbeque at a ski resort, or use it in your fireplace for delicious outdoor flavor anytime. Includes 3 section barrel, nickel plated grid, carry case and instructions. **No. 9005H . . . $19.95.**

**I.** The Lumberjack . . . a handsome, 100% cotton flannel shirt reminiscent of the heavy wool garments worn decades ago by early lumbermen. We've chosen to use cotton flannel because it's luxuriously soft, comfortably light, and highly absorbent . . . yet it still provides year 'round protection. The Lumberjack is cut full for action and slightly tapered for shape. Shirttails are squared to tuck in a stay put, and the entire shirt is machine washable (line dry). A buttoned breast pocket has been added to hold valuables safe and secure. From the backyard to the stadium . . . with blue jeans or dress slacks, you'll find the Lumberjack a versatile shirt and truly an outstanding value in men's wear. Color: Scotch-plaid pattern of pale blue, light green, brown and red. S, M, L, XL to fit 14-17½. **No. 1605H . . . $17.50.**

**J.** A versatile wrap jacket you can wear with just about anything from dressy slacks to blue jeans. Sold only by us, and made in England from a luxurious blend of 81% wool and 19% cotton. Natural in color with a contrasting design of mocha, grey, and dark brown stripes. This beautiful pattern drops from the shoulders to band the sleeves and forms a vertical line down the front closure of the coat. The jacket is cut to a practical mid-thigh length, with widely cuffed, drop-shoulder sleeves and two deep patch pockets. Also features a single-breasted closure, detachable wrap belt, and a shirt collar that lies flat or stands up to protect against the weather. You'll find the inside (including pockets) completely lined with 100% acetate. Dry clean only. Women's sizes 6-18. **No. 3690H . . . $115.00.**

K.

*Frond perfume . . . available for the first time anywhere in the world, and sold only by Norm Thompson.*

**K.** The only leading perfume in the world that is completely pure, natural oil . . . Frond captures the fresh, clean scent of Irish wildflowers in a subtle, long-lasting fragrance. Each drop combines the oils of Irish heather, Maidenhair Fern, and wildflowers which grow between the rock crevices of Ireland's mysterious Burren region. The delicate blossoms are distilled immediately after picking and the oils are aged for 28 years to isolate the exact fragrance of the living plants. Since the Burren is the only place on earth where wildflowers, ferns, and heather occur together, Frond is impossible to imitate. A strict limit has been placed on the number of flowers which can be harvested for perfume. Thus, the amount of Frond available will always be limited. **No. 3900H** (1 dram perfume) **$12.50. No. 3912H** (Bath soap) Each: **$4.50.** 3 bars for **$12.50. No. 3914H** (Limited edition, handcut Irish crystal with 1 oz. perfume) **$150.00.**

H.

J.

# The Navajo parka... a great way to wear a soft, wool blanket.

*Handy storm hood for extra protection.*

When American Indians were first introduced to domestic sheep, little did they know they were also discovering a tremendous natural resource. Soon, tribes like the Navajo were combining their weaving skills with raw wool and producing beautiful blankets in bold geometric designs. These blankets have become a symbol of the talent and imagination of these legendary craftsmen . . . and we believe our Navajo parka helps perpetuate this great tradition.

**A practical 85% wool, 15% nylon blend.**

Our Navajo parka is fashioned from our own special wool blend fabric. You get the warmth and comfort of natural wool plus the strength and durability of a modern synthetic. The soft napped texture is achieved by putting the woven cloth through a process that actually raises the fiber ends . . . resulting in a mohair-like surface.

**Cut and styled for active people.**

Our exclusive Navajo parka is cut with plenty of action room. It features a two-way zippered front for easy on and off and raglan sleeves for good fitting comfort. A pair of slash handwarmer pockets are positioned at just the right height to serve as comfortable arm rests. Finally, a storm hood protects you against the wind and rain.

**Color:** Natural shades of brown in a bold, geometric pattern. **Sizes:** S, M, L, XL, XXL to fit men's 36-50; women's 6-18. Send regular coat or jacket size.

**No. 8860H** (Men's) . . . . . **$43.50**
**No. 8869H** (Women's) . . . . . **$43.50**

**Norm Thompson**

# Genuine deep fleece sheepskin seat covers for year 'round comfort.

*Natural fleece keeps you cool and dry when it's hot... warm when it's cold!*

Natural long fleece is a unique yet practical answer to the icy cold or blistering heat of leather or vinyl auto upholstery. Our genuine sheepskin seat covers are designed to fit any make or model of car, and give you luxurious, long-lasting comfort.

**Year 'round driving comfort . . . winter and summer!**

The natural insulating properties of sheepskin will help keep you warm and comfortable on a cold winter's day, even in extremely low temperatures. All you feel is a blanket of soft, comfortable fleece.

Next summer, you'll discover just the opposite because the long fleece will help keep you cool and dry while driving. You can even leave your car parked in direct sunlight without having your seat turn into a frying pan. The soft, natural long fleece simply doesn't get hot.

*Natural deep fleece keeps you warm when it's cold, cool and dry when it's hot.*

**Here's what you can expect.**

▪ **Beautiful and unique:** The soft, long fleece adds a touch of distinction to even the finest auto interiors. When you order two or more, we'll see that they match. ▪ **Durable:** They should last the lifetime of your car. ▪ **Less chance of shocks:** Natural long fleece reduces static buildup to a minimum. ▪ **Interchangeable:** You can transfer them from your old car to a new one. ▪ **Minimizes clothing wrinkles:** Your clothing has less chance of wrinkling because these seat covers cut down on the problems caused by perspiration. ▪ **Fits any car.** Cadillac or Volkswagen . . . bench or bucket seat. We'll give you complete instructions for easy installation in 5 minutes. ▪ **Makes about any seat more comfortable** . . . office chairs, planes, boats . . . the list is endless.

**A highly unordinary gift.**

A good share of our sheepskin seat covers are sold to people who already have one or two of their own. They give them to friends and relatives, because as a gift they're not only unique, they're always appreciated.

**Colors:** Rich golden brown (shown) or elegant silver grey.

**No. 9116H** (Bench seat) . . . . . each **$45.00**
**No. 9117H** (Bucket seat) . . . . . each **$45.00**

*Easy to install in just 5 minutes . . . sheepskin seatcovers fit any car, bucket or bench seat. Great for office chairs too.*

# For people who are still individuals...

## *The original Irish Country Hat.*

Each Irish Country Hat is the creation of an individual, not a production line. Irish craftsmen take the raw wool of mountain sheep, weave it into nubby wool tweed, and then hand-cut and sew each hat separately. No two hats are exactly alike because each artisan has his own way of doing things. Natural lanolin in the wool helps shed rain. Inside, the hat is fully lined.

**Shape your Irish Hat to suit yourself.**

The shape of your hat can say a lot...that's why the final shape is left up to you. (We'll include instructions on shaping and care with each hat.)

**So versatile, you can wear it just about anywhere!**

We're responsible for introducing the Irish Country Hat to America. During the intervening years, thousands of happy customers have found it can be worn with just about any outfit, for darn near any occasion. We've yet to discover a more distinctive and flattering piece of head gear for men and women who like to express themselves in the way they dress.

**Colors:** Grey or brown tweed mixes. (Men **1200H**) Sizes: 6½-8. (Women **1209H**) Sizes: 20¼-25 ..... **$16.50**

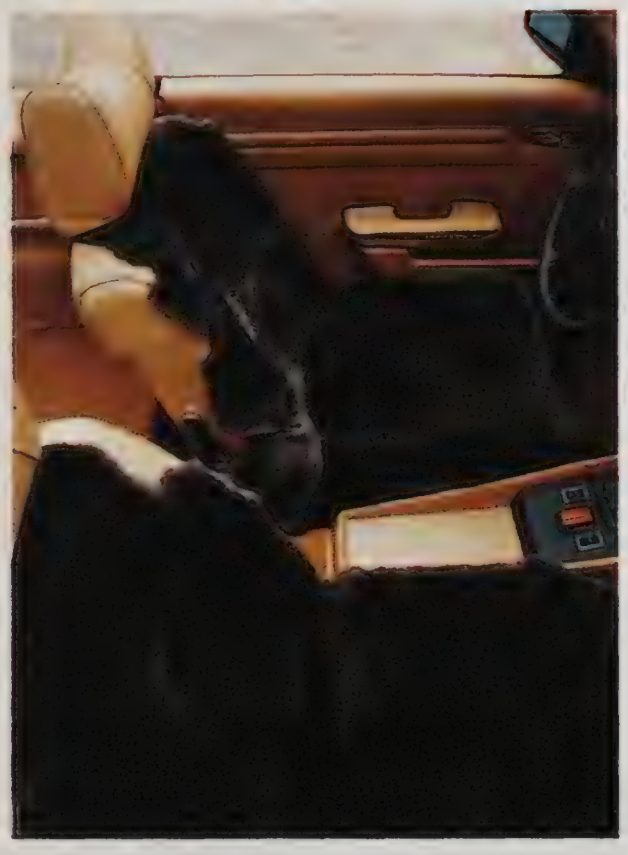
# Seat covers so scarce you'll have to phone us to reserve one.

Here in very limited quantities...and available only from us...are seat covers so luxurious, you'll think you're sitting on an expensive fur coat. The fact is, they're the only sheepskins available that can be legally classified as fur. Here's what you get:

- Only 1 in 10 lambskins are considered fine enough to be used and that makes these seat covers extremely difficult to obtain.
- The premium skins selected are sent through 15 different operations...then highly electrified, trimmed to uniform depth, and ironed to produce a rich "mouton" finish.
- The "mouton" process is costly and takes twice as long as conventional tanning. Consequently, these seat covers are expensive, and they look it! **Color:** Charcoal brown.

**No. 9127H** (Bucket) ..... **$55.00**
**No. 9126H** (Bench) ..... **$55.00**

**Call TOLL FREE anytime 1-800-547-1160**



# Designed by professional loafers ...made better for us amateurs.

## *Tyroleans for men and women.*

You'll see slacks and shorts like these on Alpine guides, big game hunters, and men and women who work at luxury resorts and recreational centers...professionals whose life style demands the design, comfort, and practicality offered by this type of casual apparel.

**Traditional European styling...adapted to satisfy American tastes.**

We've taken the good looking, functional design of European walking shorts and combined it with American comfort and easy-care. Our Tyroleans are fashioned from a rugged, yet unusually soft fabric called Tundra cloth. It's a special blend of 50% Dacron® polyester and 50% cotton. It breathes to keep you comfortable through warm weather, yet well protected in colder conditions. Tyroleans are machine washable, machine dryable and rarely need even touch-up ironing.

**Cut for action...plenty of pockets.**

Tyroleans are trim in appearance, but they're cut to give you plenty of room to move. They're great for all kinds of activities...hiking, traveling, fishing, or just loafing around the house.

Tyroleans feature a total of 6 roomy pockets. Two large slash pockets in front (9″ deep) with a pair of flapped (6½″ deep) pockets over the top provide plenty of space for keys, coins, a knife, and more. In back, you'll find two (6″ deep) pockets. They fasten with button-down flaps to secure valuables like your wallet or checkbook.

**Colors:** (shorts) beige, light blue, or white; (slacks) beige, olive, or light blue. Slacks shipped unhemmed. Men's even waist sizes: 28-44. Women's even sizes: 8-20.

Slacks: (Men's **4361H**),
(Women's **4369H**) ..... **$18.50**
Shorts: (Men's **4371H**),
(Women's **4379H**) ..... **$15.50**

# Just about the nicest thing a man or woman can do for their feet...genuine shearling slippers.

*Your foot is surrounded by soft, natural fur.*

*Made in England... sueded sheepskin with soft, natural fleece.*

Norm Thompson's genuine sheepskin slippers are a great way to let your feet relax. And when your feet are comfortable, you'll discover that your whole body feels just a little bit better.

**Your feet are surrounded by velvet-like suede on the outside... soft, warm fur inside.** The outside of these slippers is almost as luxurious as the inside. Soft, sueded sheepskin is meticulously stitched to provide a near-perfect fit. The soles have been specially tanned for extremely long wear, and a small heel has been sewn in to give you a little extra support.

Inside, all you feel is a continuous blanket of soft, warm fur. These slippers for men and women are like having a sheepskin rug under you everywhere you go. Soft . . . warm . . . and comfortable. You'll find they cushion every step you take and protect your feet from cold, drafty floors.

They're great for travel because they pack in a minimum amount of space. Once you've discovered just how comfortable these genuine shearling slippers are, you won't want to leave them at home.

**No. 2060H** (Men's) **Color:** Light brown. **Sizes:** 7-13½ ..... **$23.50**
**No. 2069H** (Women's) **Color:** Light brown. **Sizes:** 4-10½ ..... **$23.50**

# You literally walk on air!

*Glove-soft leather, foam cushioning, and an arch support you can actually feel make AIRSHOES a great value in comfortable shoes!*

*A great walking shoe... ideal for active sports.*

When we say you'll literally walk on air we mean exactly that! Our AIRSHOES are designed with a unique 3-layer construction that puts a cushion of air between your foot and the ground. In addition, AIRSHOES are made from glove-soft leather that molds to the shape of your foot and have a well-defined arch support.

**Your foot rests on a foam rubber insole.**

A layer of foam rubber gives you air cushioned comfort from heel to toe. AIRSHOES are also cushioned with foam around the ankle and under the tongue.

Beneath the insole, a layer of tiny air cells works like built-in shock absorbers to cushion each and every step. The daily pounding your feet take is practically eliminated because the air cells cushion the shocks usually absorbed by your feet.

The outer soles have a honeycomb design of small squares that traps air beneath the shoe. Within each square is a small suction cup. Hundreds of these working together cling to a wet deck or fast court and make it almost impossible for you to slip on any walking surface.

**An arch support you can actually feel!**

From the moment you put them on, you'll feel something that most shoes of this kind lack... an arch support... one you can actually feel. This not only makes AIRSHOES great for active sports, it also makes them great for walking!

**Designed for comfort...with two versatile colors to choose from.**

■ A slit for laces to keep the padded tongue neatly in place. ■ Toes that are gently squared for style and comfort. ■ A padded tongue and ankle collar to make AIRSHOES equally comfortable with or without socks. ■ Easy-care... just wipe clean with a damp cloth. ■ Colors: Rich brown or navy. (Size 12, please add $2.00.)

**No. 2730H** (Men) **Sizes:** 6-12. **Width:** A-E, EE order ½ size larger..... **$30.00**
**No. 2739H** (Women's **Sizes:** 5-10 **Width:** A-E, EE order ½ size larger..... **$30.00**

# "No sweat" sweat socks that help keep your feet dry & healthy!

Here's the near-perfect sweat sock for the active feet of serious sportsmen. It's been specially constructed with two unique layers of yarn... one wicks perspiration away from the foot, the other absorbs and evaporates it. This patented Wick-Dry® process helps keep feet dry and healthy.

**Continuous foot comfort.**

Wick-Dry® socks are machine washable and dryable, and designed to stay up. They're specifically constructed for active use (tennis, handball, golf)... but their uses don't end there. They're ideal for casual wear and perfect as liners under heavier socks for skiing, hiking, and hunting.

**Specifications:** (Leg) is 50% Orlon® Acrylic, 30% cotton, 10% nylon, and 10% other fibers. (Foot) is 65% Orlon® Acrylic, 25% cotton, and 10% nylon. **Sizes:** 10-16. For sizes 13-16, please add 50¢ per pair.

**No. 725H**.....3 pair for **$7.50**

# Solid brass kerosene lamps from the coal mines of Wales.

*An uncommon collector's item that's remained virtually unchanged since the mid-1800's.*

This is definitely **not** a "lightweight" reproduction. It's the real thing... crafted from more than three pounds of solid brass in a way that's remained virtually unchanged for more than a century. It's a small piece of British history that represents England in its truest forms. Lamps like these have played an integral part in the life and livelihood of Great Britain's coal miners and are actually responsible for saving thousands of lives.

**Originally made for use in coal mines.**

At first glance, it may appear that the lamp's primary function was that of a light source. Although it gives off light in much the same manner and intensity of the early-American hurricane lamp, its most important function was the detection of dangerous gas. By reading variations in the light given off by the wick, a miner could actually tell when a dangerous level of methane gas was present ... and thus prevent a possible disaster.

*This lamp adds charm to most any setting.*

**A handsome addition to any setting.**

We believe these solid brass miner's lamps are among the most unusual decorator items in existence. They look great on a book shelf, coffee table, desk, mantle, fireplace hearth... the list is endless. Not only will they add a special "character" to your home or office today, but we honestly feel their value as a collector's item will increase with time.

**These lamps really work.**

The lamp operates on kerosene and the intensity of the light can be controlled by adjusting the wick to different heights. Use it to provide a mellow atmosphere for conversation or build a centerpiece around it on the dining table for a very British version of "dinner by candlelight."

**A beautiful and unique gift.**

You might want to order an extra lamp for those occasions when a gift means more than providing a social amenity. Because it's solid brass (not plated) it can be easily engraved to commemorate a special occasion or just to express a special sentiment. As a gift, it would be cherished and remembered for a lifetime.

Along with your lamp, we'll send you complete operating instructions and a detailed history we think you'll find fascinating. Each lamp measure 10" in height, and 3½" in diameter.

**No. 9300 H** ..... **$70.00**

# Norm Thompson

**Dept. GS077 P. O. Box 3999, Portland, Oregon 97208**

**We guarantee prompt, dependable service.**

We want you to receive and enjoy your purchase as soon as possible, so we'll make every effort to process your order the same day we get it. To help us, please provide all information requested.

**To make payment:**

We gladly accept your personal check, bank draft, money order, Bank Americard/VISA, Master Charge or American Express. Be sure to include the complete number and expiration date of any credit card used. Sorry, no C.O.D.

## Order TOLL FREE anytime

## 1-800-547-1160 (Excluding Oregon, Hawaii and Alaska)

We suggest that you fill out the order form completely and use it as a reference when ordering by phone. If you call after hours, your order will be recorded and played back for processing at the beginning of our next business day.

**Your choice of air or surface delivery.**

We'll gladly ship your purchase via air upon request. You'll find our rates for air delivery listed below. Please indicate the method you prefer we use in delivering your order.

Name_____

Address_____

City_____ State_____ Zip_____

Telephone (Daytime hours)_____ Area code_____

☐ My personal check or money order enclosed. (U.S. funds only)

☐ BankAmericard/VISA ☐ Master Charge ☐ American Express

Card #_____ M/C Interbank #_____

Signature X_____ Expiration date_____

Send to: (If a gift to someone else or other address)

Name_____

Address_____

City_____ State_____ Zip_____

| Qty. | Catalog # | Name of item | Size | Width | Color | Price |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

For Air delivery: Purchase $1 to $26 Add $1.50; $26 to $51 $2.00; $51 to $75 $2.50; over $75 $3.00

Shipping, handling and insured delivery charges: + $1.50

Ship via air: Add + $

Total enclosed:

**Norm Thompson Gift Certificates**

If you can't decide what to give someone for Christmas this year, here's a great alternative. You can make the gift certificate for any amount from $10 right on up. With each we'll include our catalog. Please include the name, address and zip of the recipient if you want your gift sent directly to them.

***"You be the Judge™" Guarantee.***

*When we say "You be the Judge™" we mean just that! Every product you purchase from Norm Thompson must live up to YOUR expectations, not ours. If at any time a product fails to satisfy you, return it to us, postage prepaid, and we'll either replace the item, or refund your money in full, whichever you wish.*

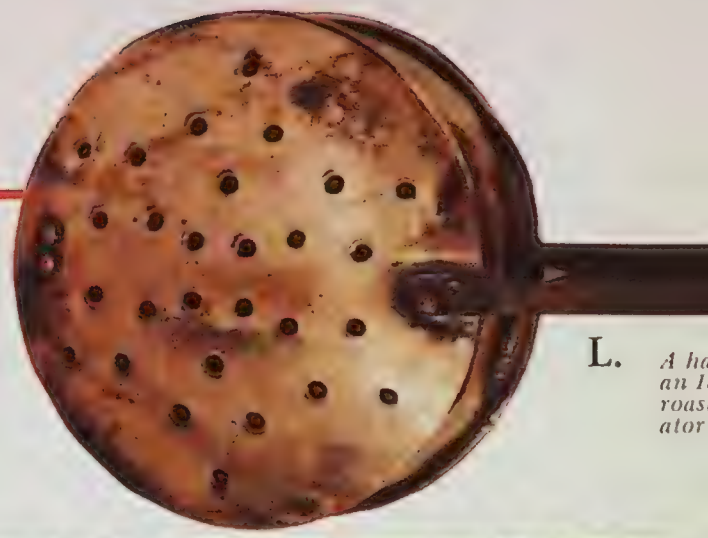
*This is definitely not a 2-week guarantee. It's good for the normal life of the product. (You being the judge of what that normal life should be.) We'll stand behind everything we sell to the fullest extent ... no ifs, ands, or buts.*

☐ Send **FREE** "Escape from the ordinary"® color catalog . . . a shopping experience by mail, loaded with new and exciting items, many of which can't be purchased anywhere else in the world. Save on exclusive men's and women's fashions, unique gift ideas, and items for your home.

# ORDER TOLL FREE
# 1-800-547-1160
## ORDER FORM INSIDE

**L.** Handmade brass and copper ware from England . . . each piece a virtual one-of-a-kind. These are not machine-made replicas, but rather re-creations of historic pieces that have been cut, hammered out, and assembled by hand . . . one at a time . . . just as they were hundreds of years ago. You'll find either will add a special "character" to almost any setting in your home. **Chestnut Roaster**. . . features a design reminiscent of its 18th century counterpart. Includes a solid copper roasting pan (5½" diameter) and 15" steel handle. **No. 9755H . . . $23.50.**

**Tea kettle**. . . a handsome re-creation of a 17th century pot. Solid copper body and lid accented by a brass handle and knob. 8½" high, 7½" diameter at crown. **No. 9751H . . . $40.00.**



L. *A ha an I roas ator*

**M.** The Country jacket . . . made mostly by hand from genuine sueded steerhide and sold only by us. If you're looking for a handsome leather jacket that you'll probably never wear out . . . this is it. The durable leather used is a special "middle split". . . a supple, lightweight suede that's extremely comfortable to wear and better fitting over other clothing. This classic leather jacket is made exclusively for us by a small, family-run firm, and their concern for perfection shows up in every detail. The jacket is finished along the bottom and features a pair of contoured pockets. Convenient snaps in front and at the cuffs provide an easy on and off. Color: Rich brown. Men's even sizes: 36-50 regular, 38-50 longs. **No. 5830H . . . $87.50.**

M.

**N.** New this year from Britain . . . genuine pigskin in a trim, well-tailored jacket for women. Without a doubt, the best value we've seen in a luxurious, easy-care suede blazer. The Londoner features wide, peaked lapels that curve softly to a double-breasted closure . . . and is cut a little longer than most to come well over your hipline. Inside, you'll find the jacket fully lined with nylon for added comfort. The classic, uncomplicated design of the Londoner makes it a fashion that'll stay in style year after year, while its unique leather makes it an easy-care luxury. Regular brushing with a foam rubber sponge will keep the suede looking fresh and free from dust. Colors: Rich brown or smokey grey blue. Sizes 6-20. **No. 3560H . . . $142.50.**

**O.** Authentic Northwest Indian smoked salmon . . . prepared by hand in the traditional way. Our limited supply of this rare smoked salmon has been provided us by the Swinomish Indian Tribe on the shores of Puget Sound. Like their ancestors, they still harvest salmon from traditional tribal fishing grounds and smoke it over alderwood fires for three days before carefully hand packing it. If you've never had the opportunity to taste authentic Indian smoked salmon, you have a pleasant experience ahead. There's nothing else like it. The flavor is so good, it's almost addictive. It's an absolutely delicious hors d'oeuvre and truly an outstanding gift item. 6½ ounce can. **No. 9210H . . . $3.75** each; six cans for **$21.00** (save $1.50).

N.

O.

*Probably the most delicious seafood hors d'oeuvre you'll ever taste.*

# Norm Thompson

*Our solid copper tea kettle with brass handle and knob . . . made from start to finish using age-old methods.*

*nade re-creation of century chestnut . . . a unique decor- n from England.*

**P.** A genuine Ruana from Colombia . . . handcrafted from a soft, light, blanket-like wool fabric. A unique product from South America that's every bit as practical as it is good looking. A roomy, ready-for-action design is combined with the comfort and protection of 100% wool to give you a year 'round fashion accessory. Use it in the winter for warmth . . . come spring and summer, it makes a great lightweight "take-along" for cool evening hours. Our Ruana is great when you're in a hurry because it's easy to put it on over just about anything. Colors: Subtle shades of browns or blues. One size fits 6-20. **No. 3710 H . . . $55.00.**

**Q.** The Rose of Schiras . . . a rare soap containing the pure, fragrant oils of a rose that grows only in one particular valley of the High Himalayas. These essential perfume oils are aged in barrels for 48 years before being distilled for use in this unique soap. Rose of Schiras is produced by Germany's C. Naumann Company . . . the only firm to use a 7-month process of continuous grinding, blending and aging to mill the purest and finest soaps in the world. Each bar is hand polished and wrapped in pure silk. **No. 3918H** (3-bar gift set) . . . **$15.00; or $5.00** each.

**R.** Our "Space-saver" wallet . . . crafted from genuine water buffalo. Holds as much as a conventional wallet, yet is so light, so compact, you could actually carry it in a shirt pocket! Efficiently organized to handle 12 credit or identification cards (back to back), and a large amount of currency. Two hidden compartments for extra cards, stamps, or pictures add even more capacity. The Spacesaver's durable, folding window compartment allows quick access to cards . . . while a sturdy money clip adds extra convenience to this efficient wallet. Colors: Black or brown. Size: 3" x 4" x 1/3". **No. 201 H . . . $11.00.**

**S.** Luxurious wool blends at the price of ordinary socks. Without a doubt, among the best dress socks we've ever offered. High quality wool in a special ribbed knit gives you a softer, smoother finish and helps keep your feet dry by absorbing most foot perspiration. The 35% nylon content adds strength and durability. Machine washable and dryable. Colors: Black, charcoal grey, navy, ivy green and brown. Sizes: Fit 10-13 or 14-16. (Sizes 14-16, add $1 per 3 pair.) **No. 707 H** (slack length) . . . 3 prs/**$9.00. No. 710 H** (over-the-calf-length) . . . 3 prs/**$11.00.**

**T.** Angora (rabbit hair) body sweaters . . . with **twice as much** Angora as similar garments available. Because of the dry, comfortable warmth this type of underwear offers, we've found it used extensively by men and women who suffer from arthritis and rheumatism. Made in West Germany, it's highly absorbent, machine washable . . . actually stimulates circulation. Color: Deep blue. (40% Angora, 30% new wool, and 30% acrylic.) **S, M, L, XL** to fit men's 36-50 tops, 28-40 bottoms; women's 6-16. Men's tops: **No. 410 H,** women's tops: **No. 419H . . . $40.00.** Men's bottoms: **No. 425H,** women's bottoms: **No. 429 H . . . $45.00.**

**U.** Our **waterproof** Cagoule Parka from England . . . designed by Chris Bonnington, the man who led the British climbing team up the Southwest face of Mt. Everest. Made from 100% polyurethane . . . a strong, resilient fabric that possesses great strength and is completely waterproof. Cut to a mid-thigh length for maximum protection, and includes a large zippered pocket for items like cameras, maps, or gloves. For neck and face protection we've added a zippered collar and drawstring hood. Colors: Navy, yellow, or orange. Sizes: XS-XL to fit men's 36-48; women's 8-20. **No. 7020 H** (Men), **No. 7029H** (Women) . . . **$37.50.**

Yale, with pipe, is flanked by Lord Cavendish at left and Duke of Devonshire, with page.

The Duke's lawyer stands at the left rear in this group portrait now at Yale University.

*By Merlin Waterson*

# Although a rascal, Eli Yale used his means effectively

*Corrupt? Venal? And violent? Maybe. Yet his tasteful treasures saved a struggling college and are now seen in a stately home*

Read any collection of 18th-century epitaphs, and as likely as not they will seem to be describing an age of unblemished virtue. Elihu Yale's own epitaph on his tombstone in Wrexham churchyard comes, then, as rather a surprise:

> Born in America, in Europe bred,
> In Afric travell'd and in Asia wed,
> Where long he liv'd and thriv'd; at London dead.
> Much good, some ill he did, so hope all's even,
> And that his soul thro' mercy's gone to heaven.
> You that survive, and read,—take care
> For this most certain exit to prepare;
> For only the actions of the just
> Smell sweet and blossom in the dust.

Elihu Yale was much too interesting and complex to collect nothing but uncritical veneration. That epitaph is his own invitation to assess his achievements, good and bad, and what better time than now, when the university named after him is 276 years old? There is a fresh interest in him, too, in Britain, be-

Prince of Wales, who opened Erddig as National Trust property, talks with Mike Snowden, the Trust's chief gardener. House front looms in background.

Yale Center for British Art

Elihu Yale's house near Wrexham, Wales, now vanished, served the merchant-governor as a country base when he returned from India.

cause in June the Prince of Wales opened Erddig Park, near Wrexham, Wales, and, for the first time, its treasures associated with Yale are on exhibition.

Great things, in the 18th century as now, are often brought about by men who are not particularly great, let alone virtuous. Elihu Yale's achievements should be seen against a similar background. This in no way alters the fact that, without his timely benefaction, that struggling college in Connecticut might well have foundered. He deserves the fame his generosity subsequently brought him. But there is no shortage of evidence to show that Yale's wealth was acquired through venality unrestrained even by 18th-century standards.

Elihu Yale's ancestral home was Plas-yn-Yale (or Iâl as it was commonly spelled) in the Welsh border country where he finally chose to be buried. His distinguished forebear, Dr. David Yale, was chancellor of Chester, some 20 miles northwest of Wrexham. Elihu himself was born in 1649 in Boston, Massachusetts, but his parents took him to England when he was three years old. He never returned to America.

In 1670, 21-year-old Elihu joined the East India Company as a clerk and was the next year posted to Fort St. George, Madras, India. That settlement, notorious for disease, was described in one 18th-century magazine as "one of the most incommodious places I ever saw" and consequently attracted "diminutive, dwarfish, crooked recruits." The life-expectancy for many of those recruits was two or three years.

A turning point for Yale seems to have been his marriage in 1680 to a woman recently widowed, whose wealth gave him a chance to begin dealing in precious stones (East India Company policy allowed employees to trade in items not in conflict with the company's business). One of the allegations later made against Yale concerned rubies of questionable quality sold to the king of Siam. His rise in the company also began about this time. He was made first a member of the council of the East India Company, then president and governor of Madras. Within three years of this appointment he was under suspicion of corruption and abuse of office. Vitriolic accusations and counter-accusations flew among the president and other members of the council. Yale finally had to leave India for good in 1699, taking with him a fortune of about 500,000 pagodas, then worth in excess of £175,000.

Certainly some of the more extravagant accusations against Yale were, and will remain, unproved. It was rumored that he had killed one of his grooms for borrowing a horse without permission. More seemingly sinister was the fact that of the four members of the council originally opposed to Yale, three were dead by 1693, at least one of them in circumstances which led his Dutch doctor to conclude that there was "no natural reason for his distemper" and that he "must have had wrong done him."

The facts of Yale's finances arouse suspicion. As governor, his salary never exceeded £300 a year. Within ten years he had accumulated nearly 600 times that amount. The letter sent in September 1690 by the council to the directors in London claimed that this "vast ill-gotten treasure" was acquired through "unjust, irregular, arbitrary and unwarrantable proceedings" and exorbitant "extortions from merchants."

Yale's reaction, if less eloquent, was in the same vein as Robert Clive's celebrated outburst when the House of Commons was questioning him on charges of corruption: "By God, Mr. Chairman, at this moment I stand amazed at my own moderation." Yale, for his part, taunted his detractors with the fact that he had amassed a mere 500,000 pagodas—he had endeavored to do better than this "poor crop."

*Merlin Waterson of Britain's National Trust has long been an expert on Erddig. He used sources in New Haven to link Yale with this estate.*

### *Yale's possessions now invaluable*

Far away from home, rewards were lavish. Risks to health were so great, stakes so high, that generous prizes were expected even if the rules had to be bent. "India," observed William Pitt the Elder, "teems with iniquities so rank as to smell to heaven and earth." It is more than likely that Elihu Yale fell into temptation, probably up to his neck. If that smacks of hounding a distinguished and revered figure, this is only because he has perhaps been given rather too much benefit of the doubt.

During two-and-a-half centuries fortune seems to have smiled particularly benevolently on what Yale chose to do with his wealth. Besides the name he gave to a great university, several of the possessions he valued so highly are preserved in museums in New Haven. In Wales the remnants of his home near Wrexham (now part of the Erddig estate) have been part of one of the most ambitious restoration projects ever undertaken by the British National Trust, involving the rescue of outstanding Oriental works of art almost certainly acquired by Elihu Yale.

Before he left his Welsh family home for India, Yale's near neighbor was Joshua Edisbury of Erddig Park. It was to Edisbury that Yale wrote from Fort St. George, gratefully acknowledging the gift of "four Rundletts of Sandpatch Ale" (Sandbatch, as the name is now spelled, is a town about ten miles from Wrexham);"fair words and praises are no price Currant for Ale," he declared, "Tis a precious Commodity that requires present Sattisfaction, which the trewth is I cannot so well discharge as I desire, therefore begg yor and

Philip Yorke, current tenant under the Trust, rides his penny-farthing past his ancestral home.

yor good Ladyes acceptance of part, in one of yor vessells fild with our best Mango Atchar to yor Selfe, & to her a Japan Skreen which come upon this Shipp—*Bengall Merchant. . . .*" Some days later Yale had to write a postscript to that letter: "Since the foregoing 'tis my misfortune not to prevail with the Captain to carry the Skreens, his shipp being full already, so pray excuse me 'till next yeare."

The screen to which the letter refers is almost certainly the outstanding piece of Chinese lacquer (or japanning, as Yale called it) now in the state bedroom at Erddig. In recent years its survival has been little short of miraculous. Extensive coal mining in the 1940s and '50s beneath the Erddig estate and directly below the house itself resulted in severe subsidence. The building fell five-and-a-half feet at one end, and only three feet at the other, damaging the roof disastrously. The state bedroom was particularly badly affected: rain poured through onto the early 18th-century bed, almost destroying its embroidered Chinese silk covering.Whole areas of the hand-painted Chinese wallpaper in the room peeled off on account of damp, and the lacquer of Yale's screen cracked and lifted.

Four years ago Erddig was given by Philip Yorke, last of the family that had lived there since 1733, to the National Trust, and since then a massive program of repair has been carried out during which all the Chinese wallpapers in the house were taken down, cleaned and rehung. Incorporating the pieces that had fallen apart over the years was exacting jigsaw-puzzle work. The screen itself was dismantled and the lacquer made secure by one of the Trust's most skilled craftsmen. Yale's gift is safer now than for many years.

For all his youthful generosity to Edisbury, Yale did not let sentiment stand in the way of business. When the wretched Edisbury had finally ruined himself building Erddig, Yale was among his creditors, pressing, it was said, for payment of £4,000 in return for the loan of half that sum.

When Yale arrived back in England he was in a position to set himself up in style in London and to use his old home in Wales as a base from which to launch into Denbighshire politics. His house in Wrexham, half-timbered and steeply gabled, was fortunately recorded by the self-taught Welsh artist Moses Griffith, before going the way of so many interesting buildings. Yale's return to Wales served him well. He obtained not only the much-coveted office of High Sheriff of Denbighshire, but also a measure of local esteem through gifts to Wrexham Church.

John Meller, the successful London lawyer who bought Erddig from the bankrupt Joshua Edisbury in 1716, was acting from much the same motives as Yale when he moved to Denbighshire. For both men an estate in the country promised social status and political opportunities that a London house, however grand, could never offer. Certainly, as far as Meller was concerned, the furnishing of Erddig was to rival any London establishment. Between 1716 and 1726 cartloads of Soho tapestries, rich cut velvets, and gilt and silvered furniture—some made especially for Erddig by the best London cabinetmakers, other pieces brought from his London house in Bloomsbury Square—made the slow and hazardous journey to Wrexham. A bill for pier glasses records that not all

the mirrors survived the trip to Erddig in one piece.

Although Elihu Yale's own collections have been dispersed, the furniture and textiles bought by his contemporary and neighbor Meller, and now preserved at Erddig, give a vivid idea of the opulence and ostentation enjoyed by that section of society into which Yale had bought himself. In the Erddig tapestry room there is a silvered pier glass en suite with a glass-topped table bearing Meller's coat of arms. The silvered chairs which are part of the same set of furniture have retained their original crimson velvet but had in the last century been crudely painted over with gold paint. This has now been successfully removed to reveal the original silver, intact and well preserved.

The tapestries in this room were the subject of an anxious letter of December 10, 1720, to Meller from his nephew Simon Yorke, who was later to inherit Erddig: "The Tapestry Weaver called here, to acquaint me that the other Piece of Tapestry was finish'd; and would have been done sooner but that he himself hath been laid-up with a Fitt of Illness. . . . I shall not now send it into the Country without orders because I believe that the Roads being full of Water, the Tapestry may possibly receive damage." The whole ensemble of tapestries and silvered furniture is of breathtaking richness, but no more so than the saloon, with its gilt girandoles, pier glasses and pier table, again all bought by Meller.

The Erddig state bed: a magnificent structure covered with extravagant silk cloth (detail below) that almost certainly came from that family friend, benefactor and frequent guest, Eli Yale.

*Formal garden restored as Yale knew it*

An inventory of the contents of Erddig made in 1726 reveals that most of the furniture in the house when Meller had completed his state rooms has in fact remained there. No less remarkable is that the essential features of his formal garden of the 1720s have also survived, although buried beneath a jungle of brambles and saplings when the National Trust was given the property in 1973. After dredging Meller's canal and pond, rebuilding the enclosed walls and replanting linden and fruit trees (the original lists of 1718 survived and have been carefully followed), the garden is once again an extension of the formality of the state rooms, and would surely be instantly recognizable to Yale. One of the sundials was in fact his.

The state bed at Erddig may well be another memorial to Yale. Its silk covering is a fine piece of Chinese embroidery, in all probability acquired from him. When he left India, hurried and harassed, Yale brought most of his fortune back with him in the form of works of art. To the end of his life he was short of ready cash, and frequently bartered, rather than sold. Among his gifts to the college in Connecticut were bundles of textiles. So it would have suited Yale well enough to have discharged a debt to the owner of

Erddig with rare silk, or it might have been another generous gesture like the gift of the screen.

The sale of Elihu Yale's property on his death in 1721 gives ample evidence that his collection of textiles was vast, although only a small part of a fortune of breathtaking proportions. Because the auctioneer took care not to flood the market, there were in fact seven sales, five of them lasting six days each, the first in December 1721 and the last in April 1723. There were more than 3,600 lots, disposing of more than 10,000 articles. The catalog mentions "a fine large Sattin Quilt, wrought with gold," which fetched £30, "fourteen yards and a half of white flower'd sattin" and "fifty four yards and a half of Bed Damask." These materials must have been similar to the silk of the Erddig bed, which may have been acquired from Yale shortly before he died. Family correspondence shows that the bed was nearing completion in April 1720.

The catalog of the sales of Yale's possessions is the more remarkable because he had in fact disposed of a good deal of his property over the preceding decade. When his daughter Anne married the second Duke of Devonshire's brother, Lord James Cavendish, the bargain was sealed with a generous dowry, and recorded in a painting now in the Yale Center for British Art. It shows the prospective bridegroom and the second Duke on either side of the former governor, with their lawyer in the background.

The marriage of Yale's other daughter, Catherine, to Sir Dudley North of Glenham, cost him £20,000 in dowry. Much of this must have been in the form of chattels, which were dispersed on the sale of the contents of Glenham. Some found their way to Connecticut, including a sundial, probably by Van Nost, and the outstanding set of Soho tapestries, which are now in the Yale University art gallery. The scenes depicted are "The Promenade," "Scenes from the Life of an Indian Nabob," "The Toilet of the Princess" and "The Concert." Although woven in London, the tapestries depict scenes of Oriental luxury close to Yale's heart.

The most celebrated of all Elihu Yale's gifts were of course those which occasioned the university's being named after him. The sums involved were modest compared with his daughters' dowries and the wealth dispersed at his death. But the college's ambassador, Cotton Mather, hit a sympathetic note when, in 1718,

"Eliugh Yale" tomb is in Wrexham churchyard. In Wales, the name was originally spelled Iâl.

Yale's "Japan Skreen," at right, was a gift to Erddig in return for "four Rundletts

he suggested to Elihu that to give his name to the institution "would be better than a name of sons and daughters." Elihu's only son David had died in India in 1688. His first donation of religious books, the portrait of George I by Godfrey Kneller, now in the university art gallery, and £200 sterling arrived in the summer of 1718. The sale in 1721 of a second shipment of goods, including trunks of muslin, calico, Spanish poplins and black-and-white silk crepe raised £562.12.0 for the college.

Cotton Mather had assured his colleagues that "What he now does is very little in proportion to what he will do." But he made the serious mistake of putting into Elihu's head the idea that the college was not staunchly loyal to the Established Church and might be tolerating dissenters. No other gifts materialized, and by 1721 Elihu was dead. His will, incomplete and unsigned, did include the figure of £500 for "Connecticote College," but their representatives could not afford to get involved in the fierce and protracted litigation contesting it. The space in the will opposite the words "To my wicked wife" was left blank.

That intriguing entry in the will suggests an embittered, discontented man; but in fact Elihu Yale had achieved more than he realized or perhaps deserved. The memorials to him, at New Haven and at Erddig, have proved more enduring than he could have dared hope. The university recently placed a plaque, which may be seen by visitors to Erddig, in the garden of Iâl's home to record its benefactor.

of Sandpatch Ale." The screen of Chinese lacquer is in the state bedroom of the great house.

# "It's pretty spooky rowing around inside a supertanker in a rubber boat."

"That's me in the back of the rubber boat," says Chief Mate George McShea. "We're not rowing on oil, but on a saltwater lake in the belly of a supertanker. And it's one aspect of life on a supertanker I can't get used to.

"Sure, a supertanker is three football fields long, and twelve stories high. But after a while those are just numbers.

## A lake in a cave

"This tank inspection is something else. After the tanks are cleaned and the residual oil retrieved and stored, they're flooded with seawater, and inspection crews go inside, checking structural integrity.

"It's like a lake in a cave, but it's inside a ship at sea. It's a big job, and sometimes it gets pretty spooky. But it has to be done, to protect the ship, the oil and the ocean. Gulf tankers have a fine record; we do all we can to keep it that way.

## Most efficient

"Supertankers are the most efficient way to move so much oil such distances. It's a real challenge working on them. But it's important work, and I think we do it well."

Gulf

**Gulf people: meeting the challenge.**

Supertankers—some almost as long as the Empire State Building is tall—are the most efficient way to ship so much oil such great distances.

Gulf Oil Corporation

Spot of blue is Peru's Laguna McIntyre, elevation 17,220 feet, most distant source of the Amazon.

*By Robert Campbell*

# A timely reprieve or a death sentence for the Amazon

*Venerable river basin in endangered biosphere faces unprecedented threat of ruin from Man's technological ingenuity and exploitation*

*Second of two parts*

Normally, river systems do not appear on the surface of the Earth overnight. Eons are required to lift the land, carve a channel, erode a watershed and provide stable conditions for the evolution of life communities or biomes. The present Mackenzie River (SMITHSONIAN, September 1977), on the other hand, was created in a mere geological instant some 10,000 years ago as the glaciers retreated. It is already playing a notable role in the world ecosystem, even though relatively few species have adapted to its harsh environs.

The vanguard of life is particularly thin along the northern rim of this huge Canadian watershed. Most organisms survive only by reproducing rather prodigiously in the brief weeks of summer. In such dramatically oversimplified environs, of course, the ecologist can fairly easily detect the main relationships among plants and animals. If the herds of caribou were not winnowed by predators, they very likely would overpopulate and starve. If the bloom of algae beneath the

Near mouth—a 12-foot-high tidal bore known as *pororoca* sweeps upriver at 10 to 15 miles per hour.

ice pack were disrupted, the food chain of the sea might collapse. If the Mackenzie failed to flood, waterfowl would have to go elsewhere to nest and train their fledglings. Any untoward event, such as an oil spill or the introduction of a new pesticide or interference with migration pathways, could be disastrous.

By contrast, in the Amazon region the number of individuals in many species may be quite small, but the species themselves seem to proliferate endlessly. The Amazon basin supports the largest single ecosystem on Earth: 2.7 million square miles of tropical rain forest and occasional savanna that have developed without interruption over an incredible 70 million years. The myriad species have evolved relationships and dependencies so subtle and sophisticated, so refined and complex, that almost nothing is known about how the system works as a whole. Perhaps it can be best understood metaphorically as a single organism, any of whose parts, if modified significantly, could enervate or destroy the entire structure. From the standpoint of environmental protection, certainly, the basin desperately needs management.

The Amazon River drains an area nearly as large as the continental United States. In a less gargantuan landscape, its main tributaries would be full-scale rivers in their own right. Some of them rise in the high Andes Mountains to the west, cascading off the towering slopes in spectacular white-water displays. Here, as in the Mackenzie, the principal product of these enormous hydraulic forces is a rich load of sediment, which gives the Amazon a characteristic muddy coloration throughout its entire meandering 4,000-mile course eastward to the sea. On the floodplain, more than 1,000 other tributaries, great and small, converge to the mainstream, flowing down from the highlands that rim the northern and southern reaches of the great basin. The region is a hydrologist's paradise.

This confluence of rivers from all across the water-

*Photographs by Loren McIntyre*

Some 75 feet up, a graceful monkey aerialist takes chancy leap from one vertiginous position to another.

shed swells the mighty Amazon to the proportions of a superriver, with the world's greatest flow, a river whose width is measured at some points in many miles. During the rainy seasons it may rise 30 to 40 feet, overflowing lowlands for such a distance that a voyager can find himself out of sight of land. Because of its great breadth, the mouth of the Amazon is subject to intense squalls that lash its surface into whitecaps imperiling the incautious boatman. About 200 miles from the Atlantic, the river breaks up into a number of broad channels which have been carved through its 250-mile estuary, pouring into the tropical Atlantic at a mean rate of five trillion gallons per day. So powerful is this thrust of turbid water that it colors the surface of the Atlantic for 20 miles or more. Again, as in the Mackenzie delta, an enormous influx of nutrients makes the Amazon estuary a fertile spawning ground for an immense variety of living things, both on land and in the sea beyond. Some of these nutrients are swept by ocean currents west into the Caribbean,

Toothless giant anteater rips open anthills with claws, slurps up its prey.

Piranha surfaces to snap at food dangled before it by photographer.

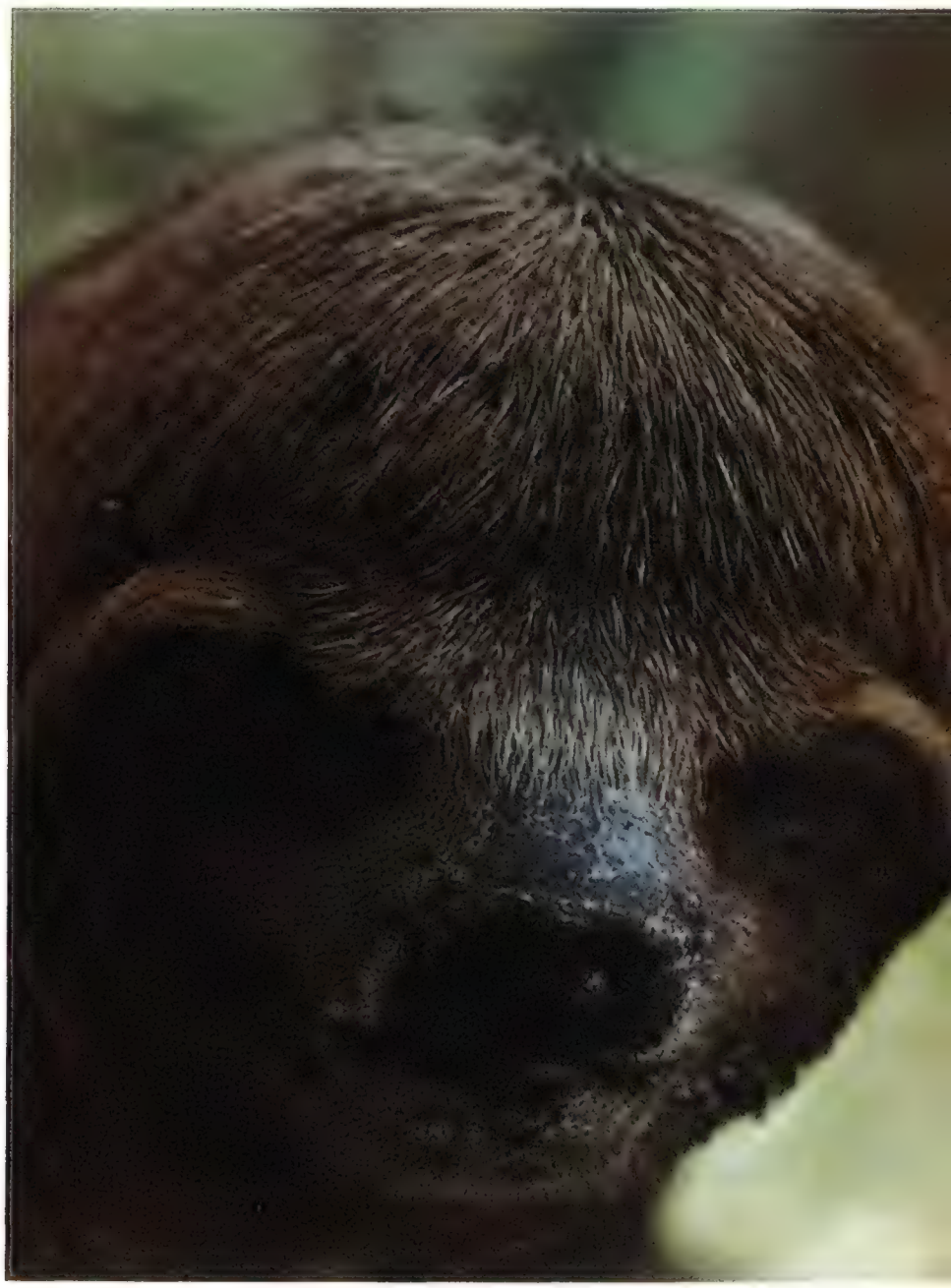
Maned wolf, in reality a wild dog, inhabits foothills of the Andes.

Such a maneuver may only play into the talons
of the ever-vigilant and voracious great harpy eagle.

whence the Gulf Stream transports them up the Atlantic coast to the fertile Grand Banks off Newfoundland, one of the world's prime fisheries.

The early Portuguese explorers, suitably impressed, named the Amazon *O Rio Mar,* The River Sea. A thousand miles upstream from its estuary at the city of Manaus, even the Rio Negro, a giant tributary of the Amazon, is four miles wide and 200 feet deep. Manaus is a thriving free port with a population of 350,000. (At Vicksburg, 200-odd miles above New Or-

The jaguar is shorter of leg and stouter in body
than its tawny, unspotted cousin, the cougar.



Appealing infant sloth may stay with family in
same tree for years. Species is exclusively arboreal.

leans, the Mississippi is one-third of a mile wide, 70 feet deep and carries perhaps 1/30th the volume of water.) For another 1,300 miles west of Manaus the River Sea is still navigable to ocean-going vessels. Throughout its length it has been designated an international waterway by the Brazilian government, and, as development proceeds, is becoming a major artery of world commerce.

The rays of the sun beat down incessantly and almost directly on the waters of the equatorial Atlantic, evaporating enormous quantities of water. The vapor rises and condenses into clouds, which the prevailing trades carry westward across Brazil, thus producing abundant rainfall over the entire Amazon watershed before yielding a final deluge on the slopes of the Andes. Except for certain fairly extensive areas with two-to-five-month-long dry seasons, the green mansions of the tropical rain forest dominate the scene.

Ucayali River, major tributary of Amazon in northern Peru, forms a splendid oxbow. Such meanders make travel by water agonizingly slow, but they spread a rich load of nutrients, which fertilize the floodplain.

Boat enters lighter-colored Amazon mainstream from a swamp where waters have turned black from rotting vegetation. Fluid may look pathogenic, but is potable because of its high acid concentration.

*Ecosystem in danger*

This 30-pound horned screamer attacked persistent photographer repeatedly with sharp upper-wing spurs.

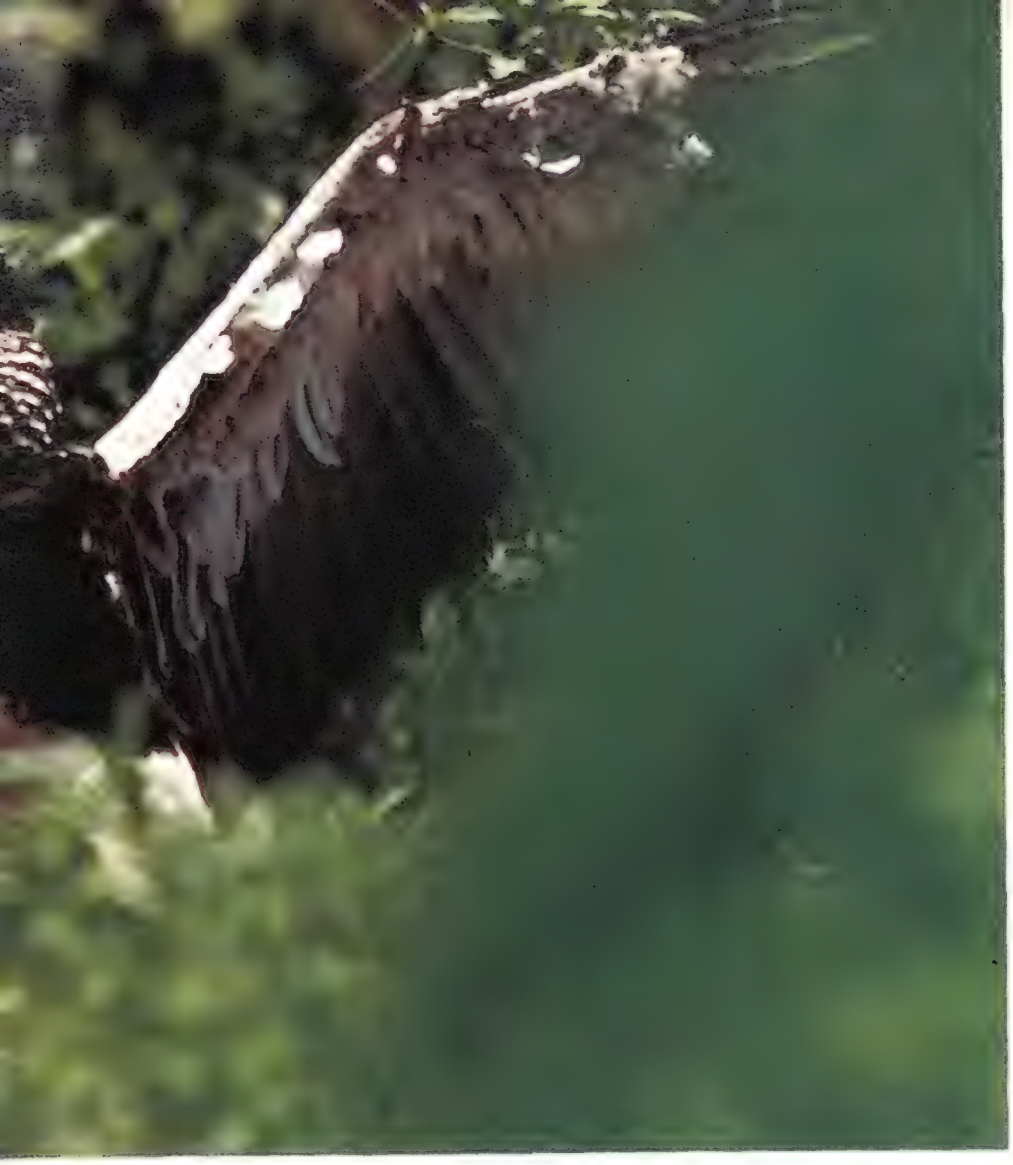
The steady supply of moisture, coupled with constant heat, provides rain forests such as the Amazon's with the thickest plant growth in the world. However, the rain forest is no random collection of trees and vines. Instead, using the variable amounts of light and moisture, vegetation has evolved in tiers; at each level, complex leaf arrangements exploit the maximum possible sunlight so that relatively little of it reaches the forest floor. The leaves absorb carbon dioxide from the air and convert it into the materials needed for plant growth, releasing oxygen in the process and helping to sustain animal life in turn. This process of photosynthesis also uses up nutrients; plants draw up large amounts of water through their root systems and then filter out what they require. A bit of the water is retained in the process, but most of it escapes through leaf pores and enters the atmosphere as water vapor—as much as several thousand gallons per acre per day. Extrapolated over the whole basin, this means that the Amazon rain forest pumps trillions of gallons of water vapor into the atmosphere every 24 hours.

Trees stretch upward to heights of 200 feet, and after the daily showers there is a quiet dripping of water everywhere. At the base of this vast, dank cathedral, huge, slablike buttresses support the towering giants above, their tops barely visible through the intervening foliage. Between sky and forest floor is the greatest biological show on Earth—exquisite noisy birds, lithe and watchful cats, supersnakes, armies of ants and termites, more than 150 species of bats, acrobatic arboreal monkeys, "violets" as big as apple trees, myrtle with stems as thick as thighs, "roses" with 145-foot trunks, lianas and air plants, voluptuous orchids, rubber trees, multifarious hardwoods, giant domed silk-cotton, wild fig and banana trees, a lone species of willow, and even jungle cacti.

It seems permanent and indestructible. Actually, the tropical forest has no firmer lease on life than the lichens and dwarfed biota of the Arctic. Because of the high metabolic rate of everything in the tropics, debris that falls to the ground in the form of dead vegetation, insects and animals, is soon digested by bacteria and fungi, or demolished by the hordes of termites and ants. The resulting nutrients are quickly absorbed by a tangle of roots. In temperate forests, dead matter decays slowly, forming a rich, loamy soil from which the nutrients are extracted over a period of many years, a process in which soil fertility is continually renewed. But here nourishment is withdrawn from the earth at once, the soil itself is nutrient-poor in more than 98 percent of the basin.

Under these conditions the rain forest, as one anthropologist noted, is a "counterfeit paradise." Some of the soils beneath it are sandy; others, like the iron-bearing lateritic types, when cleared of vegetation, bake as hard as brick under the tropical sun. In either case, they sustain only remnants of life when stripped. According to satellite data, 62,000 square miles of the Brazilian Amazon rain forest were destroyed by pell-mell development in 1975, a great deal of it to make pasture for beef cattle. At this rate, in 30 years the forest will be gone.

Today an astounding 100,000 plant and animal species occupy the Amazon basin. They represent a reser-



Vegetarian bird infuriates hunters by sounding a stentorian, gooselike alarm, frightening off game.

voir of genetic diversity that is a large part of our "whole Earth seed catalog," with vast scientific and pharmacological potential. The trees, properly conserved, could provide a perpetual source of commercially valuable wood products as well—one botanist recently identified 236 species within two-and-one-half acres of forest near Manaus—and natural rubber latex could rise again in importance as petrochemical-based synthetic rubber becomes more expensive. Moreover, farming, which depends upon crop monocultures to produce food, feed and fiber for an overpopulated world, is increasingly vulnerable to insects and plant pathogens. Foresight requires that we test, develop and safeguard the potential food resources of the tropics before they are wiped out in an orgy of exploitation. The world does not have to eat beef, but it does have to eat. Historically, the biosphere has been continually enriched by plants and animals whose ancestors originally evolved in the tropics and then either emigrated elsewhere or adapted new physiological and behavioral repertoires as temperate climates emerged and the glaciers advanced and retreated. Consequently, the loss of the Amazon could be a biological tragedy of major proportions.

Though the Amazon basin continues to support a remarkable variety of wildlife, most species are thinly scattered about in the immensity of the forest. Some

Like all parrots, these gaudy macaws are strong fliers, a trait not usually apparent in captivity.

Leaf-cutting ants drag snippets underground to serve as nutrient matter for their "gardens" of fungus.

Pierid butterflies will often swarm in huge numbers, resembling an airborne curtain of flowers, then

Less than two centimeters thick, the tongueless Surinam toad, actually a frog, seldom leaves water.

are relatives of familiar temperate-zone creatures: opossums, raccoons, small deer, armadillos, turtles, lizards. But most are characteristic of the rain forest, like the kings of the snake world, the anacondas, boas and fer-de-lances. Gorgeous blue morpho butterflies flitter about. There are birds with names as exotic as their plumage—cock of the rock, sun bittern, curassow, flint-billed woodpecker and quadrille wren.The lowest level habitat, or "first tier," is the home of the ocelot and jaguar, along with iguanas and poisonous toads. Anteaters and snuffling coatis prowl the forest floor, as do tapirs weighing up to 650 pounds, yard-long rodents and the piglike peccary.

The streams and rivers draining the forest shelter some spectacular inhabitants too, though far fewer in number today than before the decimating hunts of the Forties, Fifties and Sixties. Among them one cannot fail to notice (and to avoid) the crocodile and its relative, the caiman, electric eels and the piraiba catfish, which can reach 350 pounds and is said to gulp down

alight on a sandbank or slake their thirst on a naturalist's wet laundry, an unlikely Pierian spring.

small children on occasion. Several ocean dwellers have also adapted to the waters of the River Sea, notably the bull shark, the dolphin and the manatee, or sea cow, which feeds on aquatic plants like the water hyacinth. Then there is that voracious little carnivore, the piranha, whose reputation, like so many other things in the tropics, has been somewhat exaggerated. People who know the Amazon swim freely in it or its tributaries wherever the current is swift. In slack waters, of course, the piranha can be a problem.

Even an incomplete catalog of life in the Amazon must include a mention of the omnipresent insects and other arthropods: weird grasshoppers and beetles, an array of spiders and scorpions, army ants whose numbers are so great they can be heard marching through the forest from a considerable distance away, predatory raider ants and leaf-cutting ants filing along with neatly scissored bits of leaf to sustain fungus gardens inside their nest. The vast numbers of ants and termites contrast with the apparently small species populations generally in the area; it has been estimated that in terms of sheer biomass they weigh more than the rest of the animal and insect life of the forest put together.

One flight up, a few yards above the forest floor, comes the second tier or shrub stratum. Here are the crowns and flowers of most of the outsized violet and myrtle kin, the climbing lianas topping out in leafy profusion, and air plants that cling to the big trees and can grow a dozen or more feet long without benefit of contact with earth. Their seeds land on high branches and put out anchor roots solely for support; their leaves form a "tank" which collects dust, organic debris, insects and water to form an aerial pond for sustenance and growth.

*A new stewardship of the Earth*

In the third tier are the crowns of palm, rubber and fig trees. This tier is really a swinging place. The swingers are monkeys, the finest acrobats on Earth (pp. 102-103). Only the monkeys of America have prehensile tails to hang by, and they put them to good use as they cavort through the branches and vines of this Gordian canopy, habitat of the howler, the capuchin, the woolly and that agile ectomorph, the spider monkey. Their shenanigans are accompanied by the chatter, whistling and singing of a host of colorful birds like brilliant toucans, aracaris and flycatchers. Near the rivers are the water birds—egrets, kingfishers—and the yard-long hanging nests of oropendulas.

Topping it all off is the fourth tier, where true giants like the castana tree here and there emerge above the lower echelons along with such hardwoods as the bean and chicle. Some of the monkeys venture even to this empyrean height where they harangue the doves, tanagers, macaws and other parrots. These creatures must be alert, for this is also the domain of the great harpy eagle, one of the largest on Earth, with a six-foot wingspan and sharp talons to seize the unwary. Finally, watchful king vultures drift expectantly over the spreading panoply of life and death, searching for morsels of carrion.

The intricacy of the relations between creatures is evidence of the antiquity of the Amazon forest. There are insects geared to the life cycles of shrubs, vines locked into the life rhythms of trees, fish and reptiles geared to still other periodicities and so on, ad infinitum. We need to know a great deal more about all these connections before we interfere with them. One modest example may prove the point. Among the thousands of species of trees in the forest is one that produces profitable Brazil nuts. Entrepreneurs concluded that growing the trees in groves would make it much easier to harvest the nuts, and this was tried, but

the trees yielded nothing. It turned out that the insects which pollinate them make their main base in other kinds of trees.

Some relationships are so convoluted as to defy the laws of probability. The strangler fig depends upon birds to drop its seeds in forks of the branches of tall trees, something that happens only occasionally. But when it does, the seed germinates, sending an array of very thin roots down 100 feet or so to the ground for nourishment. As the plant matures, the roots slowly thicken, ultimately forming a maze that looks like the masts of an old-fashioned battleship. After a while, the plant strangles its host, but by then it is strong enough to stand on its own. Or take the senna tree. It produces a flower with yellow petals and brown stamens, and plays host to a spider whose yellow and brown spots conceal its presence. For a time the spider lies dormant. But when the stamens of the flower are activated, it becomes alert and catches insects attracted to the nectar. While catching its dinner, the spider may unwittingly fend off insects which might destroy the flower. In another instance, ants inhabit a plant, feeding sparely on tender leaves and honeylike secretions and nesting in the hollow stems. By their mere presence they seem to defend the host against other predators, who might be a lot greedier.

Finally, there is the *Victoria amazonica,* a water plant which produces a white flower. As the blossom matures and ambient temperatures rise, it begins to exude a special aroma. The fragrance attracts certain nocturnal beetles which crawl into the flower, feed on the ripe pollen and, in scuttling about, pollinate the plant. The next morning the fertilized flower is faintly pink and by afternoon displays a reddish purple hue. The beetles emerge when the blossom reopens the following night.

Such mutual dependencies develop only under conditions of exceptional stability over a vast span of evolutionary time. Adaptations come slowly. For every experiment that succeeds, thousands fail. The survivors, though extremely tough and well equipped to function in a benign status quo, are highly vulnerable when the rules of the biological game are suddenly changed. Professional planners in the government agency responsible for development of the Brazilian Amazon basin are acutely aware that the region is being endangered by a failure to enact appropriate environmental laws and to enforce those already on the books. However, they have a new and persuasive tool to influence the attitudes of conventional politicians. Aided by the irrefutable evidence of satellite photographs and airborne-radar maps showing actual patterns of abuse and exploitation, they can now make a convincing case for urgent conservation measures. Policy makers are beginning to see that development and conservation are partially compatible. Substantial acreages may yet be saved.

The time has come for us all to accept our responsibility as the implicit stewards of life on this beleaguered planet. Science will not save us, for by the time the living matrix of the world is understood, the brief interval allotted for solutions will have ended. The same could be said vis-à-vis the prospects for fundamental reform of social, political and economic institutions. A juggernaut of technology and development is rolling across the face of the Earth, and it can be stopped only by limiting population and controlling the nature of economic growth. But the success of such measures will depend upon the emergence of a new biological ethic, a deeper perception of our own long-range self-interest and a determination to share world resources not only with our fellowmen, but with all creatures. Perhaps we can learn not to consume what we cannot replace.

Whatever alien intellects may be watching mankind struggle for a higher level of consciousness will be entertained, to say the least. On the positive side, it must be admitted that Man is a fast study. Only yesterday did he discover that there was such a thing as a biosphere or that it comprised interlocking complexes or that we are voyagers aboard a celestial ark cruising through eternity. The next 30 years should tell whether the Amazon and the Mackenzie and the other great river systems—including our own—are to be lost and the oceans with them, or whether, having acquired a larger wisdom, we can steer a nobler course. Our very survival may depend upon it.

The eight-foot long but harmless tropical rat snake slithers down a shrub called *rabo de arara.*

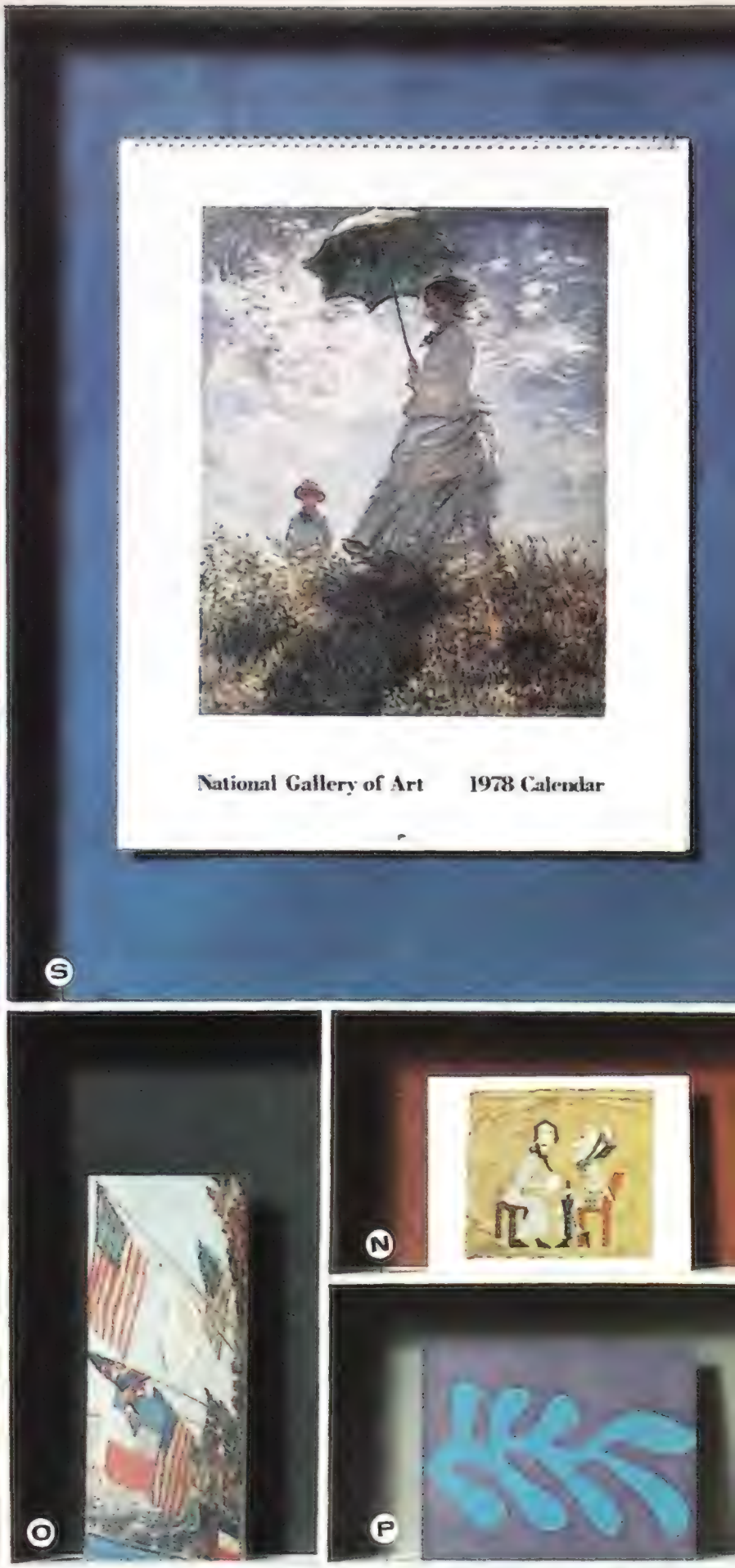
# *Holiday Greeting Cards and Gifts from the National Gallery of Art*

K

P

Q

M



S

L

R


O


N


P

**CHRISTMAS CARDS** *packages of twenty*

**A Crowned Madonna Standing on a Crescent** (detail), Martin Schongauer (before 1440-1491). Engraving (Christmas Greetings), $4.25

**B The Adoration of the Magi** (detail) Fra Angelico (active 1417-1455) and Fra Filippo Lippi (c. 1406-1469). (Peace and Joy), $4.75

**C The Virgin and Child** (detail), Rembrandt van Ryn (1606-1669). (Merry Christmas), $4.25

**D Saint George and the Dragon** (detail), Sodoma (1477-1549). (Peace on Earth Good Will Toward Men), $4.75

**E The Nativity** (detail), Ludwig Krug (d. 1532). Engraving (Merry Christmas), $4.25

**F The Holy Family,** El Greco (1541-1614). (Peace and Joy), $4.75

**G Winter Harmony,** John H. Twachtman (1853-1902). (Season's Greetings), $4.75

**H Angel Weather Vane,** Index of American Design (Christmas Greetings), $4.75

**I The Adoration of the Child** (detail), Andrea della Robbia (1435-1525). Glazed terra-cotta relief (Joyous Christmas), $4.75

**J The Rest on the Flight Into Egypt** (detail), Gerard David (c. 1460-1523). (Joyous Christmas), $4.75

**NOTEFOLDERS.** Selections from the National Gallery's collections. Packages of twelve notes of the same subjects. (No Greeting), $3.50. Available subjects are:

**K Deer and Squirrels,** Crewelwork, American School

**L Alsatian Girl,** Jean-Jacques Henner (1829-1905)

**M Four Dancers,** Edgar Degas (1834-1917)

**N Applique Picture, The Gossips,** Index of American Design

**O Allies Day, May 1917** (detail), Childe Hassam (1859-1935)

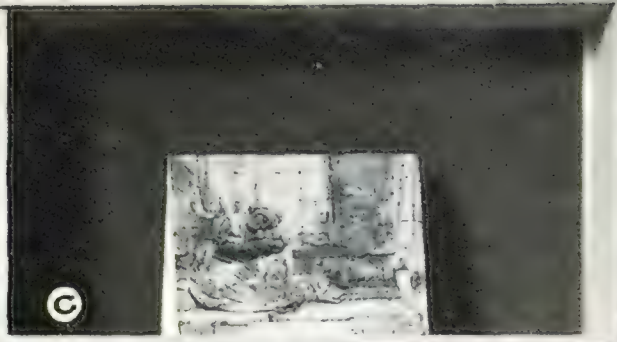
*Special Assortments*

**P Beasts of the Sea,** Henri Matisse (1869-1954). Six different details from the paper cut-out. Colored envelopes. (No Greeting) package of twelve, $6.50

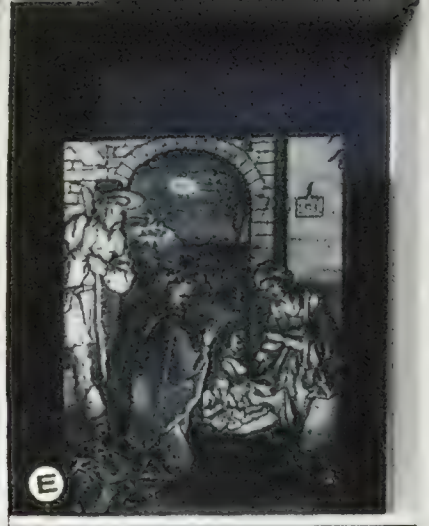
**Q Prints of Paris From the 1890s.** Six different subjects: Henri de Toulouse-Lautrec, *L'Estampe originale, Bust of Marcelle Lender, Bowing,* and *The Jockey;* Mary Cassatt, *The Letter;* Edouard Vuillard, *Le Jardin des Tuileries;* and Louis-Auguste Lepère, *Lake in the Tuileries.* (No Greeting) package of twenty-four, $5.50

A

B


C

D


E

F

G

H

I

J

T

**R Wrapping Paper** from the Index of American Design. Each package contains two sheets (size 36 x 24½) and two matching gift cards. Set of four packages, each a different design. $3.95. Applique Coverlet, rendering by D. Bates; Apotheosis of Franklin, rendering by A. Zimet; Early American Chintz, rendering by J. Mihalik; Friendship Quilt, rendering by M. A. Burton

**S National Gallery of Art Engagement/Wall Calendar for 1978.** Twelve full color reproductions. The subjects are women, as seen by 19th- and 20th-century artists. Size 13¼ x 12¼. $5.00

**T Winslow Homer Watercolor Portfolio.** Full color reproductions of six important Homer watercolors and an accompanying essay. Included are *A Good Shot; The Rise; Key West, Hauling Anchor; Sketch for Hound and Hunter; Incoming Tide, Scarboro;* and *Girl Carrying a Basket.* Size 19½ x 24¼, in a folder. $19.95

| *Cards* | *Price* | *Quantity* | *Total* |
|---|---|---|---|
| A | $ 4.25 | | |
| B | 4.75 | | |
| C | 4.25 | | |
| D | 4.75 | | |
| E | 4.25 | | |
| F | 4.75 | | |
| G | 4.75 | | |
| H | 4.75 | | |
| I | 4.75 | | |
| J | 4.75 | | |
| K | 3.50 | | |
| L | 3.50 | | |
| M | 3.50 | | |
| N | 3.50 | | |
| O | 3.50 | | |
| P | 6.50 | | |
| Q | 5.50 | | |
| R Wrapping | $ 3.95 | | |
| S Calendar | 5.00 | | |
| T Portfolio | 19.95 | | |
| | | Total Order | |
| | | 10% Smithsonian Assoc. discount | |
| | | **Total Enclosed** | |

Please Indicate Alternate Choices

| | *1st* | *2nd* |
|---|---|---|
| $3.50 card pkg. | | |
| $4.25 card pkg. | | |
| $4.75 card pkg. | | |

___ Check here to receive free, newly revised, fully illustrated **Publications Catalogue** listing books, slides, reproductions, and postcards for sale by the Gallery.

Mail with check or money order to:
Publications Service, National Gallery of Art
Washington, D.C. 20565

Orders to zip-coded addresses in all states and territories will be postpaid. Please order early.

Name

Address

City

State Zip

# Unfair foreign competition takes jobs from American steelworkers

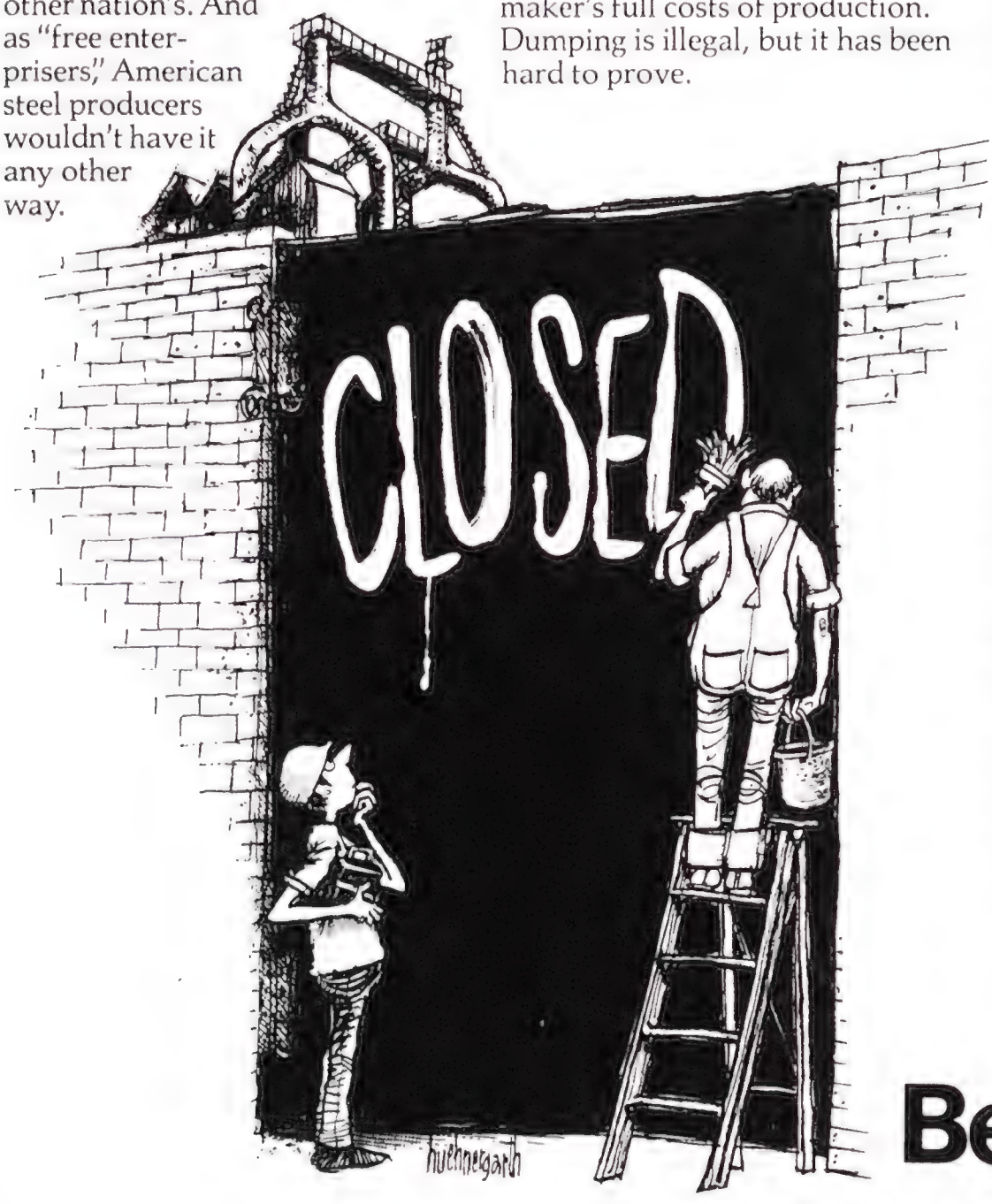
Last year, foreign steelmakers shipped 14.3 million tons of steel to our shores. That's more steel than *we* shipped that year—and we're this country's second largest steelmaker! It's equivalent to about 70,000 steelworking jobs. And all of that imported steel could have been made in America—by American labor. With our unemployment rate pushing 7%, why wasn't it?

*America believes in free trade, that's why.* Our import doors are open wider than any other nation's. And as "free enterprisers," American steel producers wouldn't have it any other way.

*We also believe in fair trade.* Most foreign steel companies are either owned, subsidized, financed, aided, and/or protected in one way or another by their governments. They don't have the same pressure we do to operate profitably or generate capital.

**Unfair competition**

We believe that much of the steel imported into the U.S. is being "dumped"—that is, sold at prices lower than those charged in the producer's own country, and usually below that foreign steelmaker's full costs of production. Dumping is illegal, but it has been hard to prove.




**Imported steel means exported jobs**

During periods of slack demand at home, foreign steelmakers push to maintain high production rates and high employment. Result: a worldwide glut of steel...much of it exported to America, priced to sell...thousands of American steelworkers laid off or working short hours.

**Needed: fair rules**

Bethlehem and the American steel industry are *not* "protectionist." We are *not* looking for permanent trade barriers against foreign steel coming into our home markets. But we *do* believe steel producers the world over should follow fair trading practices. All we're asking is a chance to compete on fair and equal terms here in our own country.

**Washington must help**

We urge the U.S. Government to insist on fair trading practices in steel, especially that steel imports be priced to at least cover their full costs of production and sale...to arrange for prompt temporary relief from the current excessive flow of steel imports... and to press for international governmental negotiations leading to an effective international agreement on steel trade.

If you agree with us about the seriousness of this problem, please write your representatives in Washington and tell them so.

**A free folder..."Foreign Steel: Unfair Competition?"...explains our answer to that question. Write: Public Affairs Dept., Rm. 476 MT, Bethlehem Steel Corp., Bethlehem, PA 18016.**

**Bethlehem** BETHLEHEM STEEL

# Nature's beauty gets its own show

*A new Smithsonian exhibit celebrates the splendors of nature for their own sake. Esthetics, not education, is the key*

Roughly row by row, natural forms include, from top, feathered dance wand, chambered nautilus; pencil urchin, amethyst and milky quartz; birdwing butterfly and beetles; starfish, Cuban tree snail and a Glory of the Sea Cone.

An exhibit devoted to sheer beauty opens at the Smithsonian this month, not at one of the art galleries but at the Museum of Natural History. Called "Splendors of Nature," it displays what the curators have chosen as the most beautiful objects in their collections, arranged solely for their appeal with a minimum of labeling. The idea was Museum Director Porter M. Kier's. Final selection was made by a curators' committee headed by paleobiologist Francis M. Hueber.

*Photographs by Robert C. Lautman*

Wingtips of these *Attacus atlas* butterflies from Taiwan look just like the heads of snakes. Specimens are about six inches long.

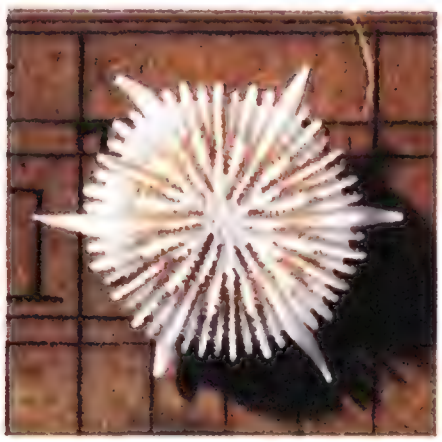
This Japanese carrier shell, a member of the gastropod or snail family, uses smaller shells to camouflage its own identity.

These are fossil crinoids, members of the same family as starfish and sea urchins, discovered not far from Elkader, Kansas.

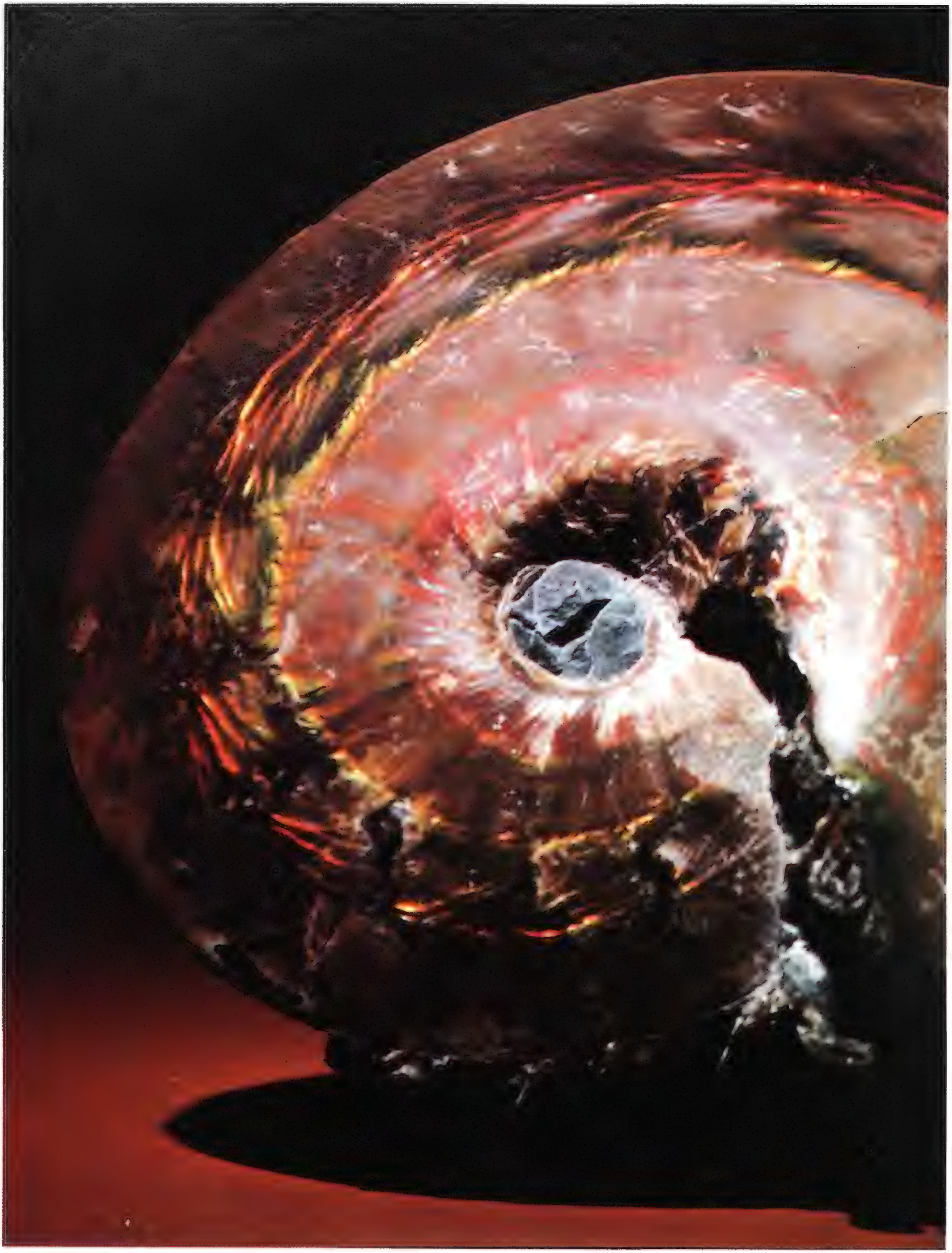
This *Phanaeus imperator* from Argentina, with false dark eyes above the real ones, is also in front row at left.

A phalanx of iridescent, metallic beetles, gathered from all over the world, looks like an advancing army in a particularly unsettling science-fiction movie. Beetles (SMITHSONIAN, December 1975) do very well.

A deep-water star coral from the Straits of Florida looks like a snowflake.

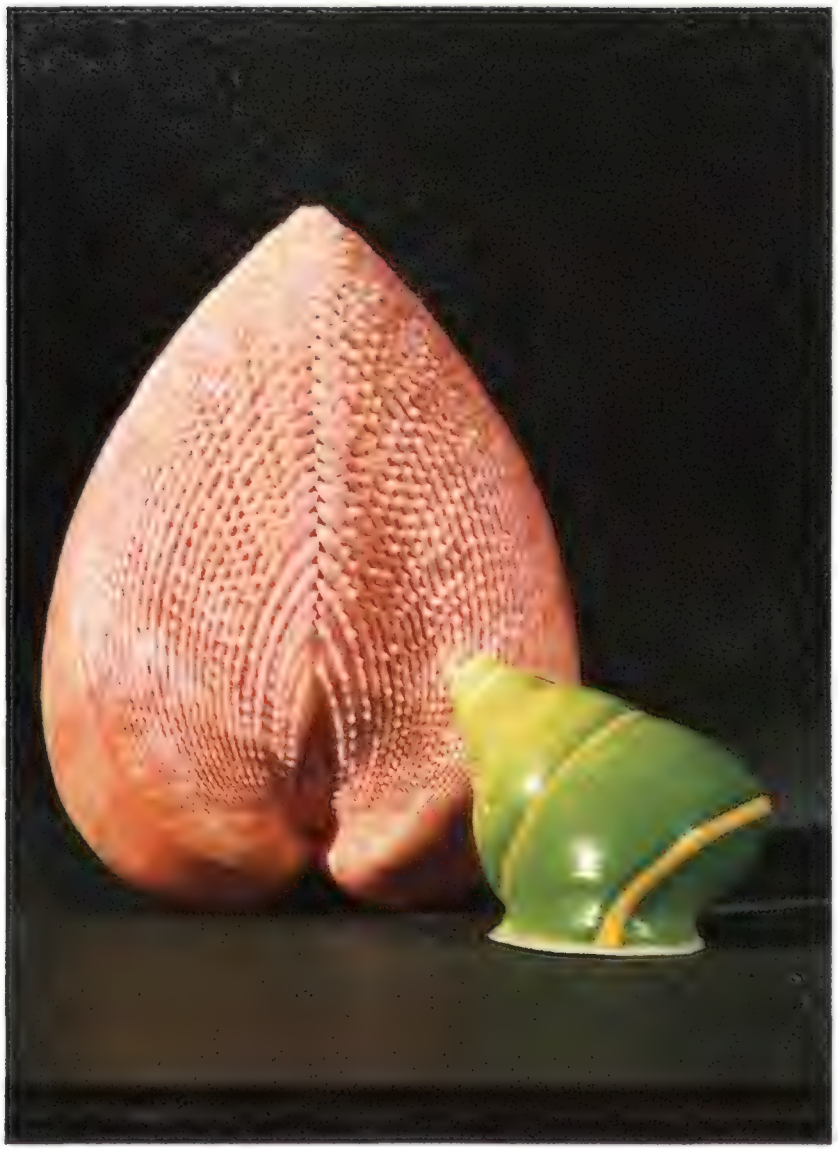


The center of this Pacific marine snail, *Architectonica perspectiva,* is really farthest from the eye, despite appearances.



The pearly spiral of a fossil ammonite (a cephalopod like the nautilus) glows in the light. About 85 million years old, this specimen was collected in the Pierre shale formation near Wasta, South Dakota.

A hat of the Jivaro Indians of Ecuador is made from the breast and tail feathers of toucans.



The larger shell is a cockle from southern Japan; the smaller a tree snail from the Admiralty Islands.

A row of spectacular butterflies from Ecuador, Malaya, Peru and Guyana to excite the lepidopterist.

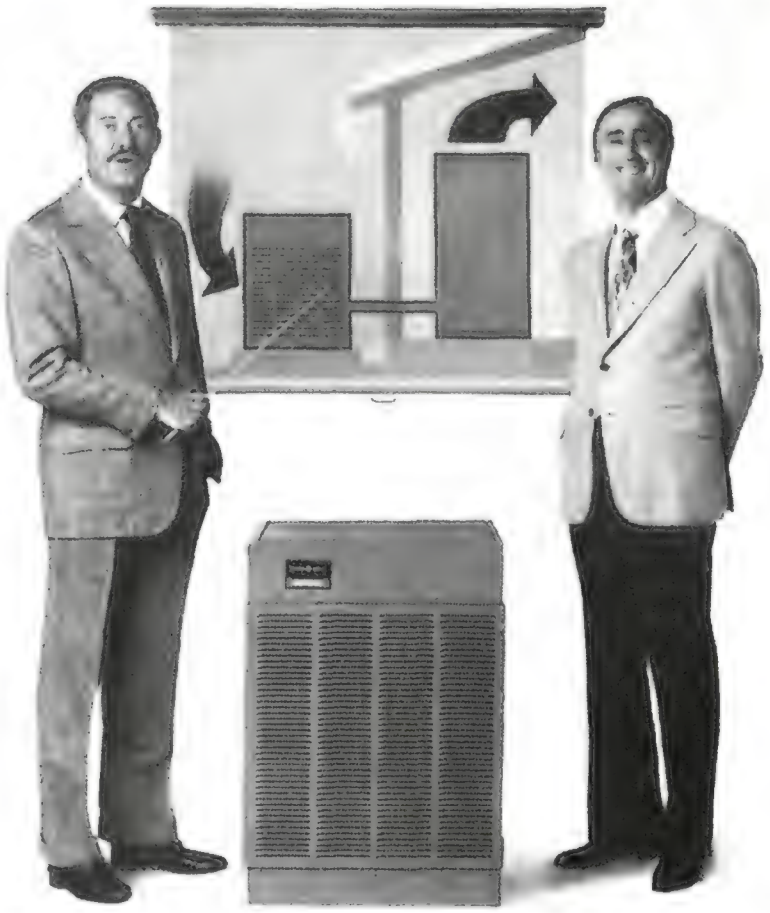
Another fossil ammonite, this one from Germany, in which pyrite has replaced the original material.

A "garden" of mimetite from Mexico, upper left, wulfenite, center right, and stibnite, lower left.

Fluorite cubes decorate the surface of a piece of celestine collected in Coahuila, Mexico.

# Rowan and Martin explain how the GE Weathertron® Heat Pump can cut your bill for ordinary electric heat 30-60%.*

1. **Dan:** The General Electric Weathertron heats your home in the winter, cools it in the summer.
**Dick:** Like a furnace and an air conditioner in one.



2. **Dan:** Even on cold days, there's heat in the outside air. The Weathertron extracts this heat and pumps it into the house.
Very often, that's all it takes to heat a house.
**Dick:** And no gas or oil shortage to worry about.

3. **Dan:** Then in the summer, it works in reverse—it's an air conditioner—pumps heat from inside the house to the outside.
**Dick:** Keeps you comfortable all year round.

4. **Dan:** *Saves you 30-60% on your heating bill—compared to ordinary electric heating, depending on where you live.
**Dick:** Makes perfect sense to me.

*For more information, write to General Electric, Appliance Park, Bldg. 6, Room 220, Louisville, Ky. 40225.*

GENERAL ELECTRIC

Two hundred years ago the Franklin tree was still seen along the Altamaha River. Bartram found it, sent seeds home; his son named it. Today *Franklinia* is extinct in the wild, survives with Man's help.

*By Joseph Kastner*

# Colonial botanist, self-taught, filled European gardens

*Wide-ranging American farmer Bartram sent British intermediary many plant species, became a celebrity and friend of Franklin*

Scholars believe this oil is probably of Bartram in midlife, but Bartram Association is skeptical.

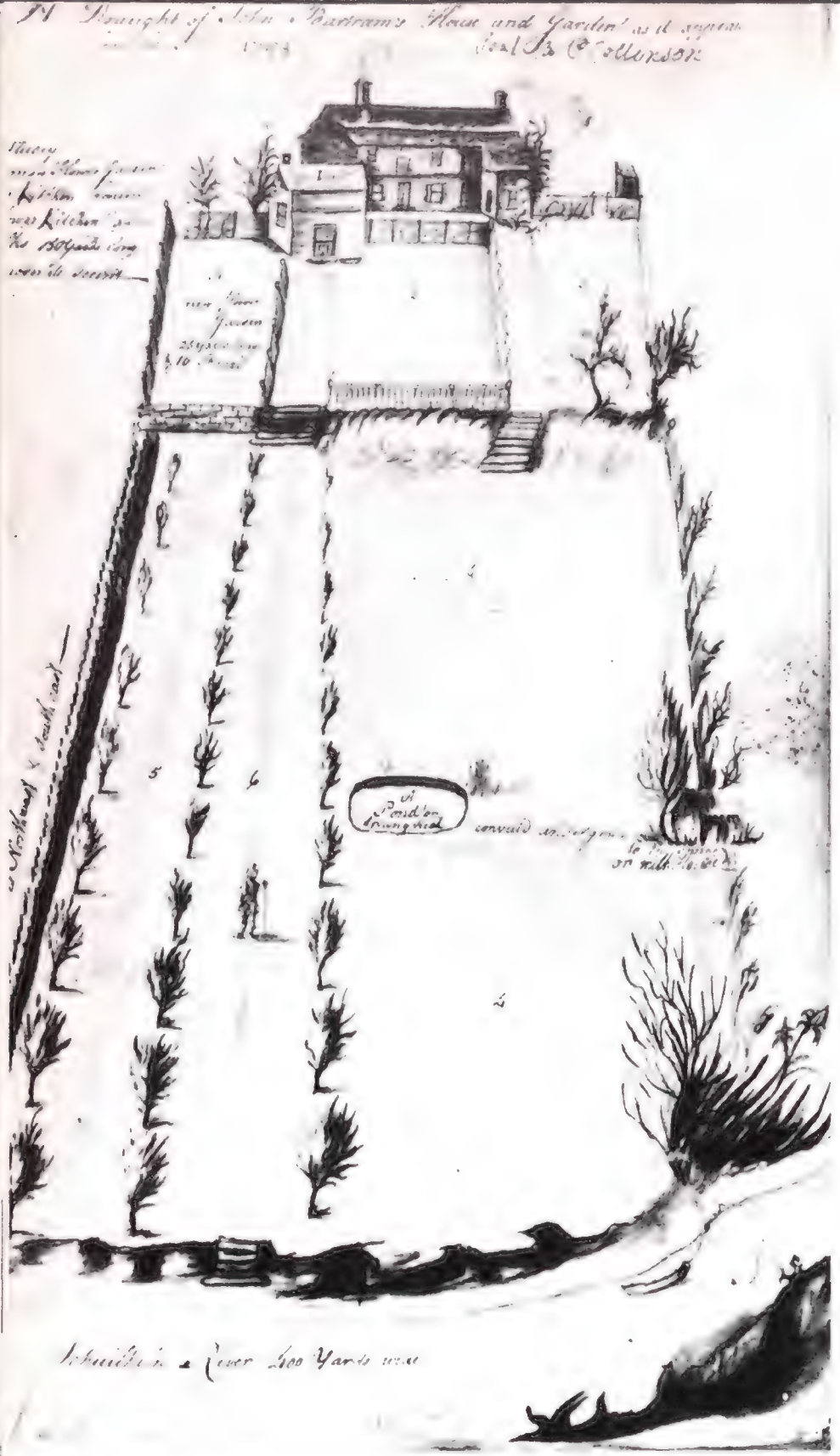
In his last days—this is the 200th anniversary of his death—John Bartram fretted about what the war would do to his international botanical enterprise. It wasn't that the Revolution had cut him off from the English clients, including George III, for whom he collected American plants. His good friend Benjamin Franklin had offered to make up for this by acting as his agent in France, where he was ambassador. But the British Army was ravaging the countryside and Bartram was afraid it would destroy the gardens he had built up painstakingly over the past half-century. His fears proved groundless. The troops passed him by, and in any case, some officers knew of his important work.

The 18th century was a golden age for botany. Men like Franklin were always ready to push aside other important affairs of state to help advance the natural sciences. And citizens of enemy countries, even though one might be the king's soldier and the other a rebel against the crown, still kept in friendly touch. To naturalists, war and politics meant little; neither did class distinctions. Once a man had proved his worth as a scientist, he was accepted into almost all circles. That was the way it was with John Bartram.

Born in 1699, he started out as a sparsely educated farmer working his meadows along the Schuylkill River at Kingsessing, three miles below Philadelphia. By the middle of the century, he was known and admired at the highest levels of European society. He become official botanist to the king of England and corresponded with the queen of Sweden. Earls and dukes subsidized him as he filled their estates with the American plants they were so eager to lay hands on. "The greatest natural botanist in the world," the famous classifier Linnaeus called him. In his own country he was listened to with respect by scientists, philosophers and politicians. When Franklin formed the American Philosophical Society, Bartram's name came just after Ben's in the list of founding members.

Bartram wrote that he had "since ten years old, a great inclination to plants and knew all that I once observed by sight, though not their proper names, having no person nor books to instruct me." This inclination had made him a skillful "country doctor," treating his family and neighbors with herb medicines—and it led him inevitably into botany. Around 1730, he went into Philadelphia, bought some botany texts and a Latin grammar and found a schoolteacher who taught him enough Latin to read them.

Bartram began gathering local plants for his garden. He soon caught the attention of learned men in Philadelphia who lent him books and encouraged him. Then an English merchant named Peter Collinson engaged Bartram to collect systematically for him.




Bartram's own sketch shows his garden was developed, not for beauty, but to ensure plants would thrive. Schuylkill River farmhouse is now partly maintained by the John Bartram Association in Philadelphia.

Collinson proposed to pay Bartram five pounds, five shillings for each box of plants. Bartram promptly began to fill boxes and send them to London. Opening his first consignments in 1734, Collinson could scarcely believe his good fortune. Bartram had sent witch hazel, bittersweet, white cedar, beech, cucumber tree, mountain laurel, steeplebush and 15 other varieties. Shipment followed shipment. "I can't enough admire thy industry and curiosity in descending to so many minute rarities what commonly escape the observation of most but such a prying eye as thine," he wrote. By 1736, Collinson was so sure of his new source that he gathered a group of English horticulturists willing to pay an annual fee to share in the cornucopia. A subscriber knew exactly what he would get for his five guineas: a box containing seeds of about 100 trees and shrubs, each one described in detail.

Bartram usually went alone into the wilderness on horseback. "I am often exposed to solitary and difficult traveling," he wrote, "climbing over mountains and precipices amongst the rattlesnakes and often obliged to follow the track or path of wild beasts for my guide through these desolate and gloomy thickets."

He rode slowly, bulky leather bags sagging with cuttings, roots and seeds, eyes moving from ground to treetops, sliding from his seat when he spotted a flower or a seedpod he didn't recognize, hauling out a book to check on it, but soon knowing far more than any book could tell him. He took in everything as he went—the direction of the wind, the changing of the weather, the force of streams and the presence of fossils, seeing everything and missing nothing. He never found anything on a second visit to a place, he boasted, that he had not seen the first time. On overnight trips he would stop at settlers' huts, crowding with a family into a shack "hardly enough for a henroost" and so thick with vermin he could not sleep; or at the mansions of Virginia aristocrats; or at Indian villages, being introduced to native food, which at first he "thought poor entertainment but . . . learnt not to despise."

The sharpness of his observations and his omnivorous intellect are evident all through his account of a journey he made in 1743 from Philadelphia to Lake Ontario. With him on the trip were cartographer Lewis Evans, Conrad Weiser, a frontier mystic and Indian agent, and Shickellamy, a French Canadian who had been kidnapped by the Indians as a boy and grew up to be an important chief. Weiser was assigned to make a treaty with the Indians.

After they set out from his house on the Schuylkill

*Mr. Kastner is a free-lance writer. This article is adapted from his book,* A Species of Eternity, *to be published this month by Alfred A. Knopf, Inc.*

Gainsborough portrays a confident Peter Collinson, London draper who distributed Bartram's exotica.

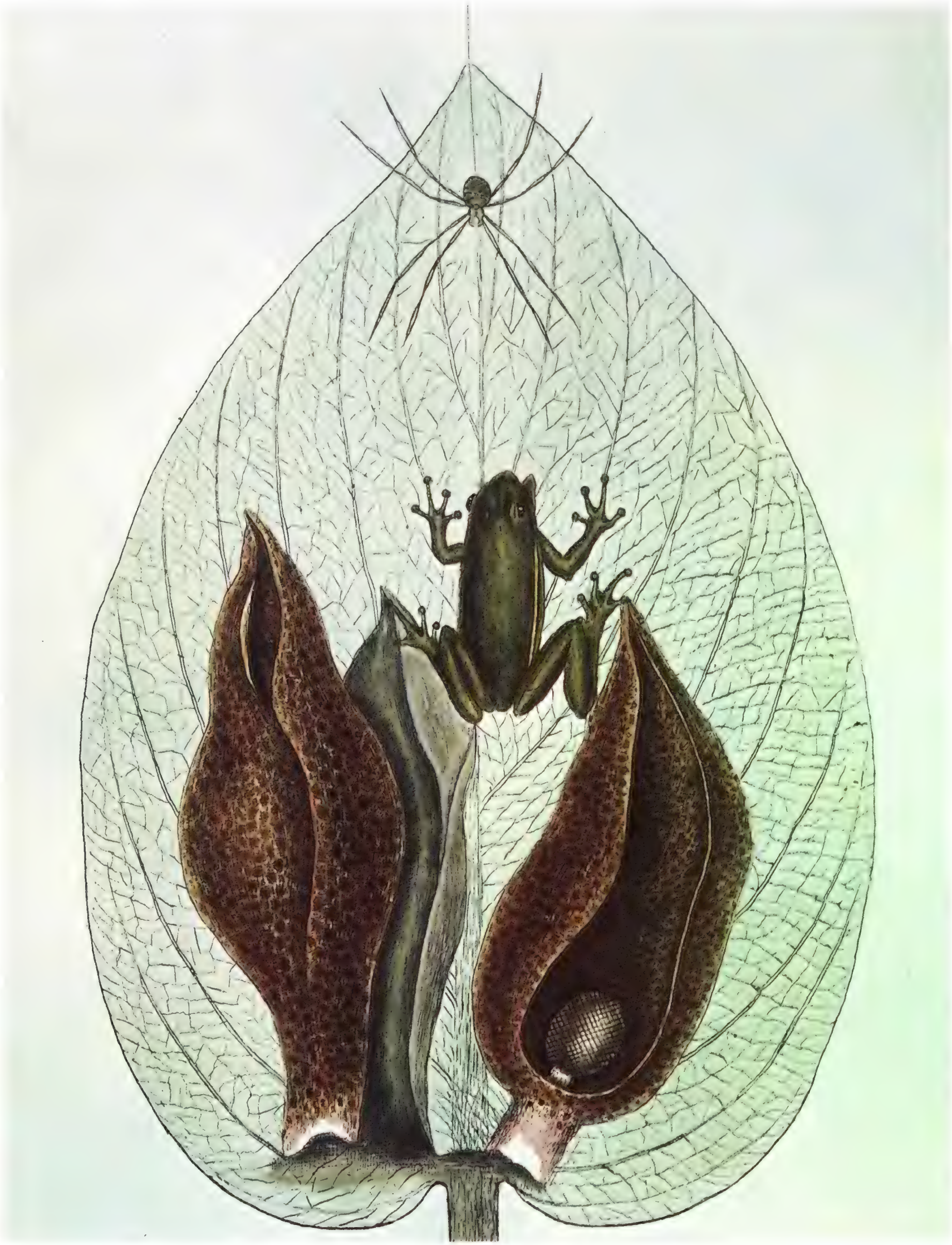
Specimen of ginseng, pressed, annotated and shipped by Bartram, wound up in an earl's album.

River, they came by Tulpehocken Hill, "so called from the Indian word signifying a tortoise, unto which the natives of the country [had] conceived it bears some similitude." Riding up a steep and stony ridge, he was warned "by a well known alarm to keep our distance from an enraged rattlesnake." . . . After they had "punished his rage by striking him dead. . . . we took notice that while provoked he contracted the muscles of the scales so as to appear very bright and shining but after the mortal stroke his splendor [was] much diminished."

They traveled on to a spot where he saw fossil "impressions of shells in the loose stones." Later they encountered eight Shawanese Indians going to Wiomick and all sat down under a shady oak. A squaw kindled a fire to light their pipes, and Weiser "acquainted them with our business. . . . They were so well pleased that they gave us the Tohay, a particular Indian expression of approbation which is very difficult for a white man to imitate well."

They continued along "a fine bottom full of great wild nettles . . . up a hill covered with spruce, oak spruce, lawrel [sic], opulus, yew with ginseng and ataliathun in abundance . . . over boggy rotten places . . . to an old beaver dam . . . by a very thick and tall timber of beach [sic], chestnut, linden, ash, great magnolia, sugar birch, sugar maple, poplar, spruce, with . . . roots and moss perpetually shaded . . . constantly rotting and rendering the earth loose and spongy. . . . We lodged in a bottom . . . had a fine warm night and one of the Indians sung in a solemn harmonious manner . . . whence I conjectured it to be a hymn to the great spirit."

After pushing through a "miserable thicket" and woods where the trees grew so close "it seems almost



Despite its inelegant name, the skunkweed soon became quite recherché among European collectors.

as if the sun had never shone on the ground since the Creation," they reached the town of Onondaga where "the chiefs were already assembled to receive us . . . with a grave cheerful complaisance." The treaty was shortly concluded.

Bartram staggered home with a rich haul of plants. He set samples in the garden between his house and the river, laid out not to impress visitors but to provide a natural habitat for the plants—boggy spots for skunk cabbage and pitcher plants, ample room on the border for oaks, sheltered spots for magnolias and sweet bay.

Inside his house, Bartram built cupboards near the fireplace where he could slowly dry the seeds he saved. Some plants were dried, pressed between heavy paper and labeled. Those to be shipped alive were wrapped in damp moss and put into heavy boxes, layer upon careful layer. Every conceivable wrapping and receptacle was used: glass jars filled with camphor to discourage mice, tortoiseshell snuffboxes varnished to seal out the air, old linen to fold around grasses. Nuts were waxed. Insects and small animals were embalmed in rum. Then the boxes and jars were put aboard sailing ships, whose captains might leave cases of hard-found shrubs out on deck to be killed by salt water or stow them in moldy quarters below decks. Rats sometimes chewed up whole shipments, and sailors, coming upon jars of snakes or beetles in liquor, would throw out the specimens and drink the preservative.

*Warships seize botanical booty*

During the constant wars, shipments destined for England might be taken by French or Spanish frigates. Bartram would get around this hazard by putting on Collinson's shipment the alternate address of Antoine de Jussieu at the royal gardens in Paris. Such was the prestige of naturalists that French captains, if they seized the cargo, would honor the address and deliver the boxes. When hostilities abated, De Jussieu would transship the booty to London—usually after picking out some choice items for himself.

Bartram came on the botanical scene at a time when Europe was avid for new plants. Of approximately 8,000 species of plants that grew in eastern North America, only a half-dozen were known to Europe before 1600. When Bartram began collecting, about 300 North American species were known in Europe. By the time the American Revolution halted the traffic, that number had doubled. Bartram was responsible for about 150-200 of that number. In short, over four decades he had introduced nearly a third of the 600 American plants known then in Europe—to say nothing of the hundreds of already known but desirable plants he had sent over.

Over the years, Bartram acquired many correspondents and customers, but none so important as Peter Collinson. A warm, obliging man with a genius for promoting the talents of others, Collinson generously shared the plants and seeds sent him with fellow naturalists in England and on the Continent. The letters between Collinson and John Bartram ran on for more than 30 years, chronicling the growth of a business arrangement into an intimate friendship that endured distance and misunderstanding. The two men never met in person.

*An occasional friendly dispute*

The earliest communication still extant is a rambling affair, "writ," Collinson explains, "a bit now and then as business will permit" to "My good friend John Bartram" on January 20, 1735. Acknowledging his pleasure at "thy curious entertaining letter of November 6th," it goes quickly on to a reminder: "please to remember those Solomon's Seals, that escaped thee last year" and to some requests for the "great and small hellebore which are great rarities here, spotted martagons . . . Blazing Star . . . a root of the *Aristolochia* . . . your wild Senna . . . and mountain goat's rue. . . . Send a root or two of the grassy leaves . . . that's good against the obstruction of the bowels."

Only three days later, Collinson wrote again: "I am very sensible of the great pains, and many tiresome steps to collect so many rare plants scattered at a distance [but] to show my gratitude I have sent thee a small token: a calico gown for thy wife."

Sometimes they bickered. "Thee thinks thyself not amply rewarded?" Collinson asked impatiently. "If thee canst not afford to go on with this business, tell us so and it will be at an end." Bartram retorted: "Thee supposes me to spend five or six weeks in collections for you. . . . I spend more than twice that time, annually . . . besides my neglect of business at home in fallowing, harvest and seed time." It had taken him two weeks to gather a few acorns of the willow oak before the squirrels and hogs got them. "You are not sensible of a fourth part of the pains I take to oblige you." Bartram often gave better than he got. When he kept asking for more and more books, Collinson admonished him. "Remember Solomon's advice: in reading of books there is no end." To which Bartram replied, "I believe if Solomon had loved women less and books more, he would have been a wiser and happier man. . . ."

In 1751, through Collinson, Bartram published in London an account of the trip he took with Weiser, Evans and Shickellamy. The printer made some patronizing remarks about the author, explaining that because Bartram lacked a literary education his style

was not what it should be. Bartram gave such criticism the back of his hand. "Good grammar and good spelling may please those that are more taken with a superficial flourish than real truth," he snorted. The book put a seal on his position in the world of natural science, though he had to ask his correspondents to write their letters in English since his Latin was so poor. His friends found it "very extraordinary that a man of the lowest education should have such a taste for knowledge and acquire such a share of it."

Bartram was a maverick Quaker, but in his own way, a devout man. He kept the Quakers' abhorrence of slavery, freeing a slave who had been brought up by the Bartram family. But he did not share their tolerance of Indians, partly because the Indian wars and the dangers a white man faced in the wilderness kept him from collecting as freely as he wanted to. There was only one way to keep Indians in hand: "Bang them stoutly."

Whenever the wars let up, he was off traveling. In 1765, after much lobbying by Collinson and Franklin, who was now in London, Bartram was appointed King's Botanist with a salary of 50 pounds a year and a commission to explore Georgia and Florida. Bartram was 65 years old but he could hardly wait to get going. He asked his son William to come along. A brilliant and artistic young man, William had a bent for botany but had been pushed by his father into business, where he repeatedly failed. He would go on, years later, to write a small classic of American literature, *Travels through North & South Carolina, Georgia, East & West Florida,* which became a best seller in Europe and had a profound influence on England's romantic poets. William met his father in Charleston where John rashly stayed out too long in the midday sun looking at the local flora and became very ill. "To think a wise man should have so little prudence," scolded Collinson when he heard of it. "What cannot be cured must be endured, for I see no remedy."

The two Bartrams explored the Carolinas and then in Georgia found what came to be the famous "lost tree" of America. It had a lovely white flower and grew only in one special place along the Altamaha River. They named it *Franklinia* and sent some seeds home for propagation. If they hadn't, the tree would be extinct today, for it has disappeared altogether from the wilds. Then they went to Florida on an expedition which John described in a diary and in *An Account of East Florida with a journal kept by John Bartram of Philadelphia.*

This was John's greatest journey, opening an untouched region to natural history. When it was over, he would return to Philadelphia, tend his business and hardly ever again leave home. But he was making the most of this trip. The account starts: "December the 19th, 1765. Set out from St. Augustine early in the morning. . . . the ground being covered with a white hoar frost." On the river shore, they discovered a "pretty evergreen which produces nuts as big as acorns and good to eat"—the tallow nut. They poked at an animal nest and "a large rat ran out and up a very high sapling with a young one hanging to its tail." The elder Bartram thus set down the first scientific account of the wood rat. The two naturalists pulled some honey from a tree and poured it over the pulp of sour wild oranges—"a relishing morsel." Later, "Our hunter killed a large he-bear supposed to weigh 400 pounds. Two of us had never eaten an ounce of bear's meat before, but we found it . . . mild and sweet, above all four-footed creatures, except venison. . . ."

Farther south they ran into muggy weather. "The mosquitoes were very troublesome last night . . . the ticks and lizards running about our tent." They cut down three tall palm trees, taking out the heart of the top bud which was "as white and tender as a turnip . . . pleasant and much more mild than cabbage."

And so John Bartram, King's Botanist, in the last half of his seventh decade, finding new wonders almost every day, continued his last journey. "Fine warm morning," he wrote in his journal. "Birds singing, fish jumping and turkeys gobbling."

Bartram's many shipments included (outside, clockwise from bottom center) mayflower, clammy azalea, rosebay, cucumber tree, white cedar, witch hazel, steeplebush, river birch, arrowwood, eastern hemlock, sugar maple, mountain laurel, bittersweet; (center, bottom to top) sand myrtle, white alder, wild honeysuckle, beech, staggerbush, buttonbush. He had close calls with Indians, whom he despised.

PMB

SMIRNOFF® VODKA 80 & 100 PROOF. DIST. FROM GRAIN.
STE. PIERRE SMIRNOFF FLS. (DIV. OF HEUBLEIN, INC.) HARTFORD, CONN.

*By Julia Davis*

# Victorians thought her a downright scandal—as she was

*Presidential candidate, votary of free love, radical feminist—ravishing but bizarre Victoria Woodhull raised Cain*

Celebrated cartoonist Thomas Nast drew Victoria as Mrs. Satan, disdaining the haggard and tattered wife who, burdened by drunken lout of a husband and two little ones, spurns free love in order to plod along rocky matrimonial path.

When in the foreseeable future there is a woman candidate for the Presidency of the United States, she will not be the first to have tried it. In 1872 Victoria Claflin Woodhull made the race, clad in the flowing skirts and bustles of her day.

In that era the idea of a "female" President seemed as absurd as flying to the moon, but Victoria declined to accept her sex as a handicap. Born in 1838 in a tiny hamlet in Ohio, that bastion of Midwestern conservatism, she was thrice-married, twice divorced, had two children, and rode the wave of the Women's Rights Movement, the Women's Lib of the mid-Victorians. A great beauty, an extremely intelligent and zealous reformer, she was one of the most notorious as well as one of the most remarkable women of the 19th century.

Victoria relied heavily on the primitive weapons that are unholy to some, suspect to others, but dazzlingly effective ever since Lilith tried them on Adam. She made men champion her, work for her, adore her.

Never given to tact or patience, she declared early in her career: "All the talk about women's rights is moonshine. Women have every right. All they need to do is exercise them." So she sailed forth to do just that, often with spectacular success. But later, when the newspaper she helped to found declared that blackmail was a perfectly legitimate weapon for women seeking those rights in the face of male knavery, Victoria did not repudiate it.

Her background was colorful to the point of being rowdy. Father Reuben Claflin was a miller, horse trader, gambler and dedicated litigant; Mother Roxanna was erratic and hysterical. With their brood of eight, they quarreled fiercely among themselves and with their neighbors, moved constantly—frequently a skip ahead of the law—dabbled in spiritualism and faith healing. Victoria, who determined from childhood to be exceptional, saw visions at school and overpowered her classmates by her harangues. Later she was to claim Demosthenes as her spirit guide.

At 15 she married a well-born, wastrel physician, Canning Woodhull. At 16 she bore a son, Byron. Byron was brain-damaged in a fall; Dr. Woodhull was a drunk. He was not, however, the only man in the world.

They went to San Francisco, where she sold cigars in a saloon, took in sewing and acted in a repertory company to support Canning and Byron until she heard a

*Author, free-lance writer in Princeton, is the daughter of John W. Davis, 1924 Democratic Presidential nominee.*

# Now the "route of the Haidas" starts in Vancouver !

British Columbia's "Inside Passage" ...we've added a bit more! Take your vehicle aboard if you wish, or take a round trip cruise. Enjoy fine food, service and stateroom accommodation. From now until next May (except for February refit), you can take advantage of off-season fares *and* the new excursion fares too. Come aboard and enjoy our sheltered waters and the great outdoors. The Queen of Prince Rupert. From Vancouver to the fabulous north!

SS7J

Send for our off-season schedule and tariff. Write to:

Name .....

Address .....

**BRITISH COLUMBIA FERRY CORPORATION**

1045 Howe St., Vancouver, B.C., V6Z 1P6, Canada ... or see your local travel agent.

M.V. "Queen of Prince Rupert" registered in Canada

Beautiful schemer Victoria Woodhull fought fair and foul for women's rights.

spirit voice say, "Victoria, go home." She obeyed, but she gave birth to a daughter, Zulu Maud, before leaving Woodhull.

With her younger sister, Tennessee Celeste, she toured the country, holding séances and claiming cures. In St. Louis the 28-year-old Victoria fascinated a Civil War colonel, James Harvey Blood, to whom she said, "I see our futures linked . . . our destinies bound together. . . ." He left his wife, child and position as city auditor to devote himself to her care and promotion. They divorced their mates and were married, but Victoria never used his surname. By this time she was an impassioned advocate of free love.

In 1868 Demosthenes' spirit advised the sisters to try New York City. They met the aging widower Commodore Cornelius Vanderbilt, who had developed a great interest in spiritualism and in healers. Ministered to by Tennessee and charmed by Victoria's eloquence, Vanderbilt eventually set them up in their own brokerage office, the first one in the country to be run by women. Ulysses S. Grant had been elected President, and in New York William Marcy "Boss" Tweed and Tammany Hall were at their corrupt zenith.

Colonel Blood kept the books, the Commodore gave tips and guidance, and soon "the bewitching brokers" were prosperous

Only one man in the world can hand-grind these 14k gold inlaid points...& only Fahrneys has them! The Sheaffer Imperial point is yours in Medium Italic or Accountant point widths $25.00

Fahrney's

1418 N.Y. Ave., N.W., Wash., D.C. 20005
(202) 628-9525

Now ready: Fahrney's Catalog 3 of fine regular and calligraphic writing instruments —a great source of gift ideas!

There's no other catalog like this! 40 color-filled pages of writing instruments, many ours alone. Orders promptly filled; satisfaction guaranteed. Send $1.00 for your copy (deductible from 1st order).

Fahrney's 1418 New York Ave., N.W. Washington, D.C. 20005 • (202) 628-9525

Please send me Sheaffer Imperial
☐ Fountain Pen spec. pt. width $25.00 ppd.
☐ Am. Ex., ☐ BankAmericard ☐ Master Charge.
Expiration date:
☐ Check enclosed. D.C. residents, add 5% Va. residents, add 4%
☐ I enclose $1.00 for Catalog 3 (deductible from 1st order)

Name

Address

City State Zip

Pert provocateur Tennessee Claflin abetted her sister, sometimes to excess.

enough to move into a brownstone at 15 East 38th Street, just off Fifth Avenue.

The Claflin family moved in too: Reuben, Roxanna, an occasional brother or sister with spouse, Victoria's children and —to scandalize the proper—Dr. Canning Woodhull, who arrived one night "sick and shivering," was taken in and nursed with Victoria's enduring compassion. He remained with the family until his death. Gossips had a field day. Victoria was living with two husbands under one roof!

The house became a gathering place for the wilder-eyed freethinkers and intellectuals. Some of them could write, notably one Stephen Pearl Andrews, a scholar and philosopher who was said to be able to speak 30 languages. Victoria and Tennie were easily persuaded to start a paper, *Woodhull & Claflin's Weekly*. They promoted Pantarchy, Andrews' socialist theories. They were the first in the United States to print the *Manifesto* of Karl Marx. They were pro-worker. They castigated the hypocrisy of churches in a city with some 20,000 prostitutes.

Then Victoria raised her sights higher. In 1870, in a long letter to the editor of the *Herald*, she issued what she called her "First Pronounciamento," announcing herself a candidate for the Presidency of the United States. "I anticipate criticism,"

First, think of the crisp crunchiness and unique flavor of California Almonds, and how delighted you would be to receive an attractive carton of them. Now, try to think of anyone who would not be equally delighted to receive them. You can't, can you? That's because California Almonds are the world's finest, and their universal popularity makes them gifts of exceedingly good taste . . . for anyone . . . for any occasion.

Duché (rhymes with "gourmet") is one of the country's oldest and largest processors of nuts . . . specializing in California Almonds. Most of our almonds are sold in bulk to confectioners, bakers and ice cream makers throughout the world. However, each year a small portion of our crop is literally *hand-selected* for special processing, flavor-protected in *8 oz.* vacuum-sealed tins (with re-sealable plastic tops), placed in attractive gift boxes, and offered for sale, in limited quantities . . . by mail. They are labeled, with pride . . .

**Duché California "Gourmet" Almonds**

For gifts you know will be enjoyed, fill out the coupon below, attach it to your gift list and send it to us, along with your check or money order. While you're at it, why not be nice to yourself . . . and add an order for your own happy munching. *Your satisfaction is unconditionally guaranteed.*

A LIMITED WARRANTY TO CONSUMERS ★ Good Housekeeping PROMISES REPLACEMENT OR REFUND IF DEFECTIVE

Each Gift Pack contains an assortment of 8-ounce resealable tins, including SMOKED, BARBECUE, BLANCHED & NATURAL. Prices shown include shipping anywhere in U.S.A. and to servicemen & women with A.P.O. addresses.

Duché ...rhymes with gourmet

T.M. DUCHÉ NUT CO.
P.O. Box 845 S
Orland, Calif. 95963

Please send ☐ to me ☐ to attached list

_____Four-tin gift packs @ $6.50 _____

_____Six-tin gift packs @ $8.90 _____

☐ Please send brochure on other sizes

Name:_____

Address :_____

City, State & Zip:

_____

**T.M. Duché Nut Co., Inc.** P.O. Box 845 • Orland, Ca. 95963 • An affiliate of THE TRAVELERS

Within 2 or 3 years of retirement?

**DISCOVER THE BEST THAT LIFE OFFERS IN DEL WEBB'S SUN CITY**

**A Fabulous Arizona Resort Vacation for one or two people: Just $150***

Get ready for a fun-filled vacation in America's most famous resort-retirement community! Golf, tennis, swimming and special parties are just a few of the things you'll be invited to enjoy. Plus you'll stay in a beautiful air conditioned apartment with a completely equipped kitchen, color TV, attached carport and private patio.

*INTRODUCTORY RATE:

**$150** For 1 week: Oct. 16, 1977 – May 31, 1978
For 2 weeks: June 1, 1978 – Oct. 15, 1978

Prices subject to change without notice
17400 N. Del Webb Blvd., Sun City, AZ 85351

**MAIL THIS COUPON TODAY!**

**Del E. Webb Development Co. Dept. SMI-107**
**P.O. Box 1725, Sun City, Arizona 85351**

Send complete details on Sun City Vacation Special plus a beautiful full-color Sun City brochure to:

Name _____

Address _____

City _____ State _____ Zip _____

*Offer limited to availabilities and to vacationing parties with one member 50 years of age or older and no member under 18.

Del Webb's Sun City is NOT a lot sales development

**LYNCHBURG**
**HARDWARE & GENERAL STORE**
Box 344, Lynchburg, Tenn. 37352

**Old-time Riverboat Playing Cards**

Both of these decks are prettier than a painting, and so is the antique tin card case. Each card is a bit larger and thicker than normal—like those used on riverboats in the 1890's. There's a black and a green deck—both with an antique gold "distillery design." The face cards are reproduced from 100-year-old artwork. So it's a real unusual set of cards for the serious player. Twin deck in antique case: $7.50. Postage included.

**Send check, money order, American Express, BankAmericard or Master Charge, including all numbers and signature.**
(Tennessee residents add 6% tax.)
For a color catalog of old Tennessee items, send $1.00 to the above address.

**Royal Pewter**

A Viking legend depicted in the handle, these functional cheese slicers combine satiny pewter handles with durable 18/8 stainless steel cutters for a lifetime of use. Dishwasher safe, tarnish resistant. Handsomely gift boxed with translation of the legend.

$15.00 ea. ppd.

Specify cutter style A, B, or C

1876
**DAVID-ANDERSEN**
**NORWAY**
Oslo — Atlanta — New Orleans — San Francisco

Shipped immediately from our U.S. stock, postage paid and insured.
We honor AX, BAC/VISA, MC (include all numbers and expiration date)

**Atlanta Hilton Hotel P.O. Box 56562**
**Atlanta, Ga. 30343 (404) 659-6400**

©David-Andersen of Norway-U.S.A., Inc.

Tennessee drives four-in-hand, Victoria cracks whip over bulls, bears of Wall

she said, disarmingly. She was not disappointed. In the face of it, she clung to her avowal that if a Victoria could rule England, it was time for one to run the United States.

The brand-new *Weekly,* along with her column, "The Petticoat Politician," which James Gordon Bennett ran each week in the *Herald,* were the obvious forums in which to promote her candidacy. But Victoria didn't let it rest there. She sent a memorial on electoral rights for women to both houses of Congress and presented it in person to the House Judiciary Committee—a distinction no woman before her could claim. "Women, white and black, belong to races. A race of people comprises all the people, male and female. The right to vote cannot be denied on account of race. . . .With the right to vote sex has nothing to do," she said. The men were impressed by her personality, if not by her ideas.

Some of the more liberal suffragists, who had attended the hearing out of curiosity, were bowled over. For a time, they made Victoria one of their own. The National Woman's Suffrage Convention gave her a place of honor on the platform with Susan B. Anthony and Isabella Hooker, and applauded wildly when she repeated her speech to the Committee.

Before long, Victoria got herself squarely into the middle of the most flamboyant scandal of the century. Eliz-

Street and scatters nervous speculators in 1870 satire on their brokerage firm.

abeth Tilton, the wife of a parishioner of the Reverend Henry Ward Beecher's Plymouth Church in Brooklyn, confessed to her husband that she had had an affair with the preacher. Mr. Tilton accused, Beecher denied. Victoria, always in arms against "bogus sentimentality" and "pulpit Pharaseeism," threatened to print details in her weekly. Tilton visited her to prevent this and, as Victoria put it,

Commodore Vanderbilt stood by sisters with counsel and checkbook at the ready.

*Lars-Eric Lindblad invites you to participate in his momentous*

**JOURNEYS INTO ANTIQUITY**

*Today, an expedition along the Nile, from Cairo to Aswan is an experience not to be duplicated anywhere else in the world.*

*We will explore archaeological treasures of unparalleled beauty and examine an ancient civilization which was in many ways as advanced as ours today.*

*Lindblad Travel offers 3 separate Nile expeditions with optional extensions to Ethiopia, Greece and Yemen.*

*Please write for our brochure or give us the name of your Travel Agent.*

LINDBLAD TRAVEL, INC.
Dept. SE
133 East 55th Street, N.Y., N.Y. 10022
751-2300 or toll free 800-223-9700

**FREE SPEECH**

LEARN A LANGUAGE IN 60 DAYS WITH LINGUAPHONE

Linguaphone is a *personal, one-on-one* technique we have spent 50 years perfecting in 70 different countries around the world.

When we tell you that you could be speaking simple, confident French or Spanish (or any of 20 other languages) in 60 *days*, it isn't just an optimistic promise.

**Free record/cassette and brochure show you how to:**

- Learn a language in only 30 minutes a day.
- Grasp grammar and vocabulary effortlessly.
- Acquire an authentic accent.
- Open up new cultural horizons.
- Be more successful in business.

**Linguaphone Institute, Inc.**
**Dept. SM02, 79 Madison Ave.**
**New York, N.Y. 10016**

Rush FREE sample lesson indicated, plus illustrated folder. I understand I will be under no obligation.

Send sample lesson in: ☐ French ☐ Spanish ☐ Record ☐ Cassette

NAME

ADDRESS

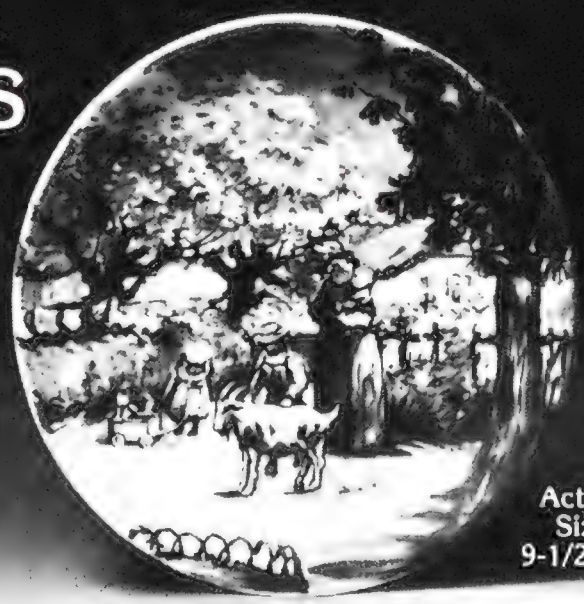
CITY STATE ZIP

I am most interested in
☐French ☐Spanish ☐Italian ☐German
☐Hebrew ☐English ☐Arabic ☐Other

THE HAMILTON COLLECTION announces
The "lost" collection of Delft masterworks

**THE MONTHS OF THE YEAR**

A superb series of 12 original Delft plates offered in a numbered edition strictly limited to 2500 sets in the U.S.




From artwork "lost" for nearly 100 years, Porceleyne Fles, the world's oldest producer of authentic Delftware, has created an exquisite series of 12 Delft plates, "The Months of the Year." They are available in the U.S. exclusively from The Hamilton Collection and are offered on a first-come, first-served basis. **For complete details, write for a free prospectus to The Hamilton Collection, 40 East University Drive, Arlington Heights, Ill., 60004. Dept. 107**

The Original One and Only
Fruit-of-the-Month Club®

| Christmas | January | February |
|---|---|---|
| Royal Riviera® Pears | Crisp Mountain Apples | Royal Grapefruit |
| **March** | **April** | **May** |
| Royal Oranges | Hawaiian Pineapples | Wild 'n Rare® Preserves |
| **June** | **July** | **August** |
| Home-Canned Fruit | Giant Kiwi Berries | Exotic Nectarines |
| **September** | **October** | **November** |
| Oregold® Peaches | Alphonse LaValle Grapes | Royal Beurre® Bosc Pears |

*A dozen dazzling gifts — all year*

You never SAW 'em so big or TASTED 'em so good. Only 1 person in 1000 ever gets such impressive, exciting gifts. You'll get thanks and praise all year from the lucky folks you name.

**3-BOX CLUB:** Order Gift No. 111 . . . $25.95 delv'd
Surprise 'em with gorgeous Gift Boxes for Christmas, January and February!

**5-BOX CLUB:** Order Gift No. 141 . . . $42.95 delv'd
Keeps coming and coming! Christmas, January, February, May and September!

**8-BOX CLUB:** Order Gift No. 151 . . . $69.95 delv'd
Delight 'em to pieces, again and again — Christmas, Jan., Feb., May, Aug., Sept., Oct., and November!

**12-BOX CLUB:** Order Gift No. 201 . . . $104.95 delv'd
A Gift Box every month, all year around!

**EASY TO ORDER:** Send list of names plus check or money order. (No C.O.D.'s) Tell us how to sign greetings. Everything's beautifully packaged.

Send your orders to:

Harry and David®
Box 525-B Medford, Oregon 97501

WE GUARANTEE COMPLETE SATISFACTION OR YOUR MONEY BACK

WANT OUR FREE CATALOGS? THEY'RE DELICIOUS!
See more of our farm fresh Christmas Gifts and Fruit-of-the-Month Clubs in honest-to-gosh full color. Just send off the coupon right away

Harry and David®
Box 525-B Medford, Oregon 97501

PLEASE SEND FREE CATALOGS TO

NAME _____

STREET _____

CITY _____

STATE _____ ZIP _____

©1977, Harry and David

Under cool scrutiny of suffragists, an impassioned Victoria cites 14th and 15th Amendments, asks that House Judiciary Committee support votes for women.

"He slept every night for three months in my arms. . . . A woman who could not love Theodore Tilton . . . must be dead to all the sweeter impulses of nature." He wrote her biography, *con amore*. Then Victoria got Tilton to arrange a meeting with Beecher. She claimed that the delightful inevitable took place, but she could never make him come out publicly for her. All the while, Colonel Blood, true to the principles of free love, made no objection.

Stung by sniping and innuendo from Beecher's sisters and others, Victoria rented Steinway Hall to set her principles before the public on November 20, 1871. It was a good and honest statement, but then Victoria, spurred on by hecklers, released an extemporaneous barrage that electrified the nation. "I have an inalienable, constitutional, and natural right to love whom I may, to love as long or as short a period as I can, to change that love every day if I please! And with that right neither you nor any law you can frame have any right to interfere. . . . Let me leave my doors and windows open . . . living so nobly that the best [must] be drawn to me by irresistible attraction."

In a hail of criticism and a few droplets of praise, Victoria, by now president of the National Association of Spiritualists, stumped the country in support of a program then considered wild—universal suffrage, easier divorce laws, women's right to chart their own destinies, government employment for the unemployed, graded taxation, free trade, government ownership of mineral resources and public utilities, the abolition of war through international arbitration—and free love.

Victoria was decades ahead of her time in some of the causes she championed so fiercely. The signed articles in the *Weekly* and the speeches were almost certainly conceived and ghosted by Andrews, Blood and others. No one could question her brilliance, her conviction or dedication, although one lover suspected she could neither read nor write. She set the country on its ear by airing and forcing discussion of hitherto taboo subjects.

A motley bunch of her supporters, including a judge from Cincinnati, formed themselves into the Equal Rights Party and in May 1872 nominated her as their Presidential candidate, with Frederick Douglass, the famous Negro leader, for Vice President.

Nicknamed "That terrible siren" and satirized in cartoons, she was also referred to derisively as "The Woodhull."

She hoped for support from the women's suffrage movement, which had split into two factions. Neither group came out for her. Denied a place on the ballot because she was one year short of the constitutionally mandated age of 35, she still received a few thousand votes. But on Election Day she was in jail.

Soon after the convention her personal affairs, never exactly quiet, were in an

At any altitude, at any speed, in any weather, at any time, against any threat, the best fighter in the world today is the F-15 Eagle.
F-15 EAGLE
The world's best fighter
MCDONNELL DOUGLAS

EQUAL OPPORTUNITY IN PROFESSIONAL CAREERS. SEND RESUME: BOX 14526, ST. LOUIS, MO. 63178

1927-1977! 50th ANNIVERSARY OF LINDBERGH'S FLIGHT TO PARIS!

JUST DISCOVERED! FULL COLOR PRINTS OF 21 HISTORICAL AEROPLANES!

THE PILOT'S COLLECTION

**Walden IX** (American) / **Taube** (German) / **Short** (English) / **Gun Bus** (English) / **Pitcairn Mailwing** (American) / **Ryan St.** (American) / **K-R Challenger** (American) / **Curtiss HS-2L** (American) / **Sopwith 7F.1 Snipe** (English) / **1909 Farman** / **1908 Farman** / **Famman** (French) / **DH-1** (English) / **Benoist** (American) / **Morane-Saulnier** (French) / **Caudron** (French) / **Travel Air** (American) / **Curtiss Robin** (American) / **Fleet** (American) / **B-24 Liberator** (American) / **Thomas "Headless" Seaplane** (American)

The plant which lithographed these 8½"x11" prints 12 years ago was sold recently. The new owner found them in sealed cartons in perfect condition— just 1,400 sets in full color, 200 sets in sharp black and white ... all printed on handsome white antique text, ready for framing

Drawn by famous aviation artist Jules Wagner (who died in the crash of a DC-7 in 1962), they are faithful and beautiful renderings of the planes that made aviation history.

**FREE!** Detailed history of each plane included with each set. Send $19.95 plus $1.00 for postage and handling for each FULL COLOR Set, or only $9.95 plus $1.00 for each black and white set (no C.O.D.'s, please)

☐ Check Enclosed ☐ Master Charge
☐ BankAmericard ☐ VISA

Card No. _____ Exp. Date _____

***ORDER TODAY!* ONLY 1,400 SETS IN EXISTENCE!**

*orders will be filled strictly in sequence as of date received.*

**15 day full refund privilege if not completely satisfied.**

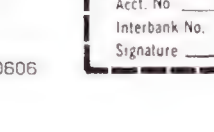
**DELTCO MARKETING CORP.**
**3537S Lawson Blvd. Oceanside, N.Y. 11572**

The Solid Brass Oil Lamp of Imperial Russia

- Magnificent replica of the coveted 1880's original.
- Adjusts from dim to 60-watts bright.
- Defies blackouts, ignites romance!

19th Century Russia. The winter wind and the hungry wolves howl. You poke up the fire, turn the wick lower in the gleaming kerosene lamp.

Such is the scene evoked by this legendary solid brass lamp, copied faithfully from the rare Imperial Russian original—the lamp that shone on generals, anarchists, spies and Czarinas in the 1880's! Shines 60-watts bright or dim. Satisfaction guaranteed. 20½" high. $29.50 each, ppd. Save $5.00! Buy a pair. Only $54.00 ppd. *N.Y. res. add tax. BA, MC, and AX accepted; give name, card number, address, expiration date. Or telephone: (914) 248-7031.*



PONY EXPRESS SYSTEM
**Dept. S-1011, 2986 Navajo Street**
**Yorktown, N. Y. 10598**

*Electronic Ceiling Projector Clock*

**Projects the Time on your Ceiling**

**Invisible electronic beam projects the time in big, easy to read numerals.**

*Electric Alarm*

See the time at a glance– from anywhere in the room

At last someone has invented an alarm clock that clearly shows the time in the dark! This new electronic clock projects the correct time on your ceiling in big, 3 inch digital numerals. Time projector feature will run continuously or you can switch it off and tell the time from the conventional dial face. Wakes you up with a firm but gentle alarm Measures 3" X 6" X 6½" high

MADE IN U.S.A.

- INVISIBLE BEAM HAS NO GLARE TO KEEP YOU AWAKE
- CORRECT TIME IS PROJECTED CONTINUOUSLY ON CEILING–OR CAN BE SWITCHED OFF
- PLEASANT BUT FIRM ALARM BUZZER

**$19.95**

**A division of Robert Kahn Enterprises, Inc.**
ELECTRONICS INTERNATIONAL
210 SOUTH DESPLAINES STREET, CHICAGO, ILLINOIS 60606

**MONEY BACK GUARANTEE!**

**ELECTRONICS INTERNATIONAL** Dept CHD 48
210 South Desplaines St., Chicago, Illinois 60606

☐ Please rush on money-back guarantee _____ Electronic Projector Clocks at $19.95 each, plus $2 postage and handling.

☐ I enclose $_____ ☐ Send C.O.D. I enclose $2 dep[illegible]

(Ill. residents please add 5% sales tax)

Name _____
Address _____
City _____
State _____ Zip _____

**YOU MAY CHARGE YOUR ORDER**

☐ M. Charge ☐ BankAmericard ☐ American Exp

Acct. No. _____ Good Thru _____
Interbank No. (Find above your name) _____
Signature _____

Apprehended by federal marshals on obscenity charge for publishing details

uproar. The clouds of gossip so blinded New York landlords that she was thrown out of her boardinghouse—she had been ejected from the mansion on 38th Street following her free love speech and no one else would rent to her. Finally, the night clerk at a hotel could not resist "poor sad beautiful Mrs. Woodhull," and took in the entourage. One day soon after, the sisters came home from their office to find the rooms locked against them.

It was Tennie's fault. Giggly and cozy rather than grave and wistful, she tried to keep up her end by suggesting herself as commander of the all-black Company C of the Spencer Grays Regiment. When four black officers called for her in a carriage, it was too much for the hotel. They all slept for weeks on their office floor until a married Claflin sister rented a house under a less notorious name.

Commodore Vanderbilt, in the meantime, had married a much younger woman and was no longer so interested in the sisters. Money ran low.

In the midst of these crises, and with the *Weekly* about to go under for lack of funds, Victoria reverted to her conviction that any publicity was better than no publicity. She addressed a spiritualists' convention and, pushed by "some power stronger than I," she and Demosthenes spent more than an hour pouring out, "like a fiery flame," the whole Beecher-Tilton story. Nor was this enough. Rev-

of Beecher-Tilton scandal in their newspaper, sisters are hauled off to jail.

eling in what she called a "great Universal Washing Day," she then printed 12 columns of details in the *Weekly*. The issue, dated November 2, 1872, came out a few days earlier and sold out at once.

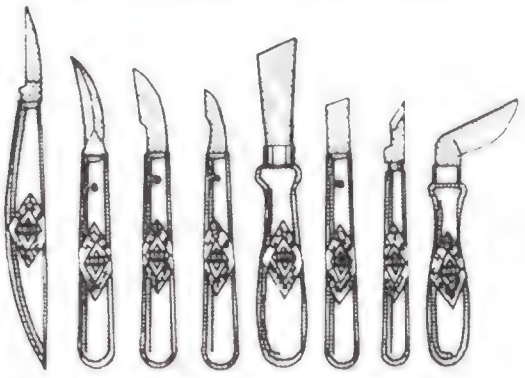
Henry Ward Beecher and his friends bought it up at every newsstand they could reach. Beecher disdained to reply, but that granite foe of vice, Anthony Comstock, swore out a warrant against Victoria and Tennie for sending obscene

Supporters gather to comfort the woebegone pair in their jail cell.


# LEICHTUNG inc

## FINE WOODWORKING TOOLS

For yourself or someone else special at Christmas

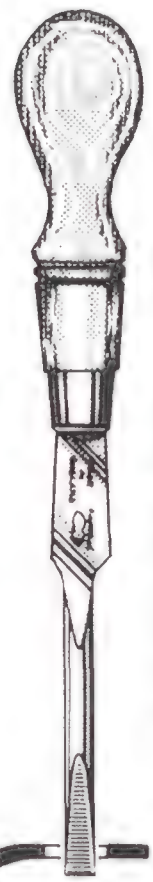


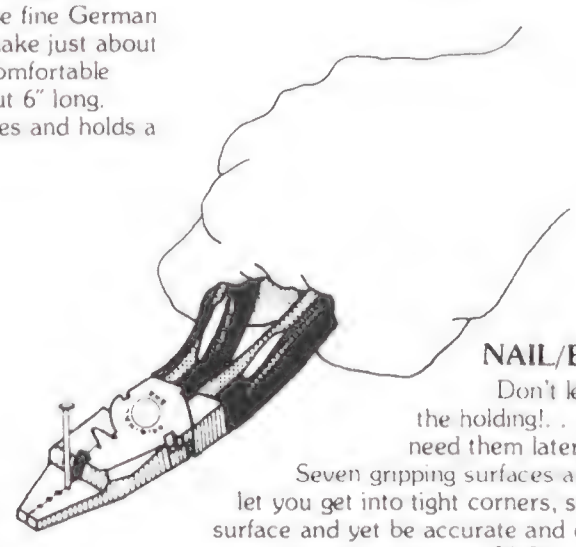
**8 PIECE CHIP CARVING SET**

Get into a fun hobby! These fine German carver's tools will let you make just about any cut you could want. Comfortable hardwood handles are about 6" long. Special knife alloy steel takes and holds a razor edge..... **$18.95**

**6 PIECE CABINETMAKER'S CHISEL SET**

These shapes and this quality have been used by Europe's master craftsmen for two centuries! Hand-forged, ground and honed Tungsten-Vanadium steel. Marvelously comfortable ribbed-ash handles with nickelled double-reinforcing hoops. From 10½"-12" long; set includes ¼", ⅜", ½", ¾", 1" and 1¼" widths..... **$34.95**





**NAIL/BRAD PLIERS**

Don't let your fingers do the holding!. . . . you'll probably need them later for other things! Seven gripping surfaces and an offset head let you get into tight corners, stay flush with the surface and yet be accurate and ouchless, 8" long; vinyl covered handles.....**$8.95**

**5 PIECE CABINETMAKER'S SCREWDRIVER SET**

Tools of this design were used by the 18th century masters Heppelwhite, Sheraton and Phyfe. Turned oval beech handles are just "fist-right". Put a wrench to the flattened area below the ferrule for your most stubborn screws. Lengths (ferrule to tip) 3", 4", 5", 6" and 8".....**$15.95**

**7 PIECE BRAD POINT WOOD BIT SET**

Made just for wood not metal. Brad point leads right to razor sharp flutes so that you drill the hole exactly where **you** want it . . . perfectly straight and cleanly round. Excellent chip ejection, so no binding. Fit any ⅜" portable drill or drill press. Set includes ⅛", 3/16", ¼", 5/16", ⅜", 7/16" and ½" sizes. Made by German pro's for pro's . . . and "wood-be" pro's..... **$11.95**

PHONE ORDERS IN TO ASSURE CHRISTMAS DELIVERY (216) 461-4677

Yes Ric Leichtung,

□ Please send me: (Leichtung pays all postage!)

___ 8 pc. Chip Carving Sets @ $18.95..... ____

___ 6 pc. Cabinetmaker's Chisel Sets @ $34.95..... ____

___ 7 pc. Brad Point Bit Sets @ $11.95..... ____

___ 5 pc. Cabinetmaker's Screwdriver Sets @ $15.95 ____

___ Nail/Brad Pliers @ $8.95..... ____

Ohio Residents add 5½% Tax ____

TOTAL COST ____

**Method of Payment**

□ Check □ Bank Americard □ Master Charge

Card # _____ Good thru_____

(For MC) Enter 4 digits below # _____

□ Enclosed is $1.00 Please send me your 36 page 1978 Catalog of Fine Tools **PLUS** all catalogs, brochures and new tool bulletins **FOR THE NEXT TWO YEARS!**

□ Enclosed is my order for Woodworking Tools. As my **BONUS**, please send your 36 page 1978 Catalog of Fine Tools etc. for the next two years **FREE!**

Name _____ Address_____

City_____ State_____ Zip_____

Mail to. LEICHTUNG, INC. 701 Beta Drive #1077SM Cleveland, Ohio 44143

# Here's An Eye-Opening Introduction To An Exciting New Hobby

**Get into astronomy now with the newest in portable, affordable telescopes**

Now you and your family can explore the wonders of the universe with an exciting wide-field telescope. Enter the fascinating science of astronomy with the Edmund Astroscan 2001. This quality telescope provides portability and superior optics for excellent astronomical viewing. Only $149.95, this classic Newtonian reflector gives clear, spectacular views of the heavens.

The result of months of sophisticated engineering, this fine instrument features: fully coated optics; 4¼" precision polished mirror; high-impact plastic body; and cast aluminum mount. Order yours today with the coupon below!

**ONLY $149.95**

**COMPLETE AND MAIL COUPON NOW**

EDMUND SCIENTIFIC CO., Dept. KS19, Barrington, N.J. 08007

Send me

_____ Unique Edmund Telescope(s) #2001 @ $149.95 ea. $_____

Service and Handling Charge $ 1.00

Enclosed is ☐ Check ☐ M.O.

for TOTAL of $_____

Signature _____

Name _____

Address _____

City _____

State _____ Zip _____

☐ Please send me FREE Edmund 164-pg. catalog (Dept. KS20)

Charge my

☐ American Express

☐ BankAmericard

☐ Master Chg

Interbank No. _____

Card No. _____

Expiration Date _____

**30-Day money-back GUARANTEE.** You must be satisfied or return any purchase in 30 days for full refund

# Christmas Gifts by SMI

**ORDER NOW!**

**GENUINE LEATHER TRUNKS**

Choice of: Brown, Artic White, Sierra Tan and Black.

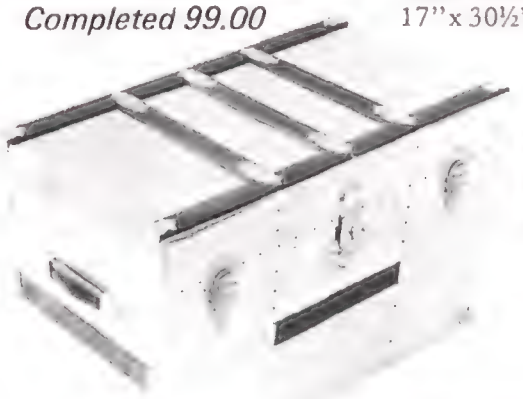
**SHENANDOAH MINI TRUNK**
15" x 17¼" x 19¼" H
– Wt. 27 lbs.

*Mini Kit 69.00*
*Completed 99.00*

THE SHENANDOAH
17"x 30½"x 19¾"H – 45 lbs.

*LARGE KIT*
**99.00**
*Completed*
**149.00**

- Cedar lined with solid cedar compartmented tray.
- Genuine hardwood banding.
- Easy to follow instructions.
- All wood pieces pre-cut and factory sanded.
- Complete with all hardware, screws and decorator tacks.
- Craftsmanship and materials fully guaranteed.



*LARGE KIT*
**119.00**
*Completed*
**169.00**

**Specify flat or round top on both large trunks.**

Offer Expires Dec 31, 1977

THE SAVANNAH
17" x 30½" x 19¾" H 45 lbs
Clad with permanently polished solid brass
*Also available in Mini Trunk size.*
*Mini Kit 79.00*
*Completed 109.00*

2 to 4 WEEKS DELIVERY
SHIPPING CHARGES COLLECT
We ship UPS where available

SOUTHERN MOBILE INDUSTRIES, Inc.
Highway 47, North, Dept. 60
P. O. Box 360, Bay Minette, Ala. 36507
Alabama residents add 4% sales tax.

We accept personal checks. When ordering with BAC or MC, please include account no. & Expiration date.


material through the mails. Another man brought a libel suit against Tennie. On November 2 the two sisters were lodged in the Ludlow Street Jail.

This did not end their roller-coaster career. Two new admirers put up $16,000 bail. Victoria arranged to speak at Cooper Union, although the hall was crawling with officers ready to arrest her. The police did admit a little old lady in a Quaker bonnet who scuttled down the aisle, reached the platform and tore off her bonnet to reveal Victoria's glistening curls. She spoke for an hour and a half.

Jailed again, bailed again. After more than a year of the law's delays, the sisters were tried and acquitted.

They went to London, financed some said by Vanderbilt money for fear they might testify in a suit to contest the will of the late Commodore, brought by three of his heirs. Somewhere in all this turmoil, Colonel Blood was discarded and di-

In widely circulated *Puck* cartoon, a righteous Theodore Tilton hauls his

vorced, his only recorded comment being: "The grandest woman in the world went back on me."

Victoria and Tennie were somewhat quieted by experience, but by no means extinguished. Both married wealthy Englishmen, and became rich and widowed old ladies of propriety and property. It took Victoria several years to win over the straitlaced family of John Biddulph Martin, a partner in Martin's Bank. Free love had to be publicly eschewed in the process, but she had Martin in her pocket from the beginning and he never wavered in his faith in her. After his death, she ruled as a benevolent despot over her estate at Bredon's Norton in Worcestershire, making—on a small scale—some of the reforms she had favored: better housing for the workers, better schooling for the young. She died at 89, in her chair, having refused to go to bed for four years lest she die there.

tearful wife away as lecherous Henry Ward Beecher snickers at reconciliation.

# The thinking person's guide to slide projection.

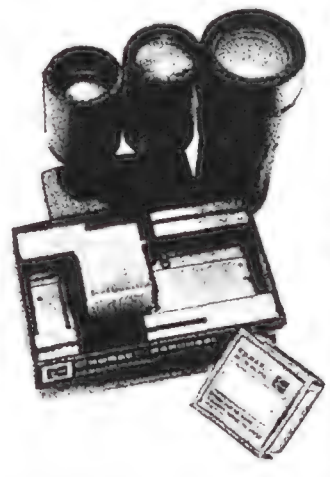
It's an exciting moment when you can really start enjoying the rich, dramatic beauty of your own color slides. There's nothing like seeing them projected. Which is why you should consider one of the many Kodak Carousel projectors. They are available with a curved field projection lens for sharper edge-to-edge projection.

## They treat your slides gently.

Every Kodak Carousel projector uses gentle dependable gravity to drop each slide into place. They're all easy to use. And all now come with the Kodak Carousel Transvue slide tray with illuminated slide numbers so you can always locate a slide, even in the dark. Kodak Transvue slide trays make slide storage easy, too.

## Different controls for different requirements.

Kodak Carousel projectors are available in a variety of models. Many models offer remote control slide change—both forward and reverse. Some models give you automatic focusing; and some models even offer automatic slide changing at selected intervals.

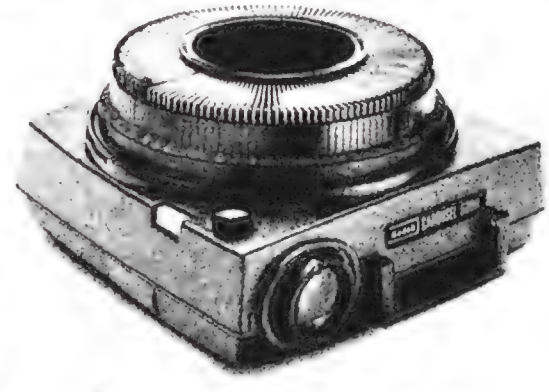


## Know what your future options can be.

Everything from special-purpose lenses, stack loaders and slide clips, to special "presentation aids" for slide-to-tape synchronization are available for use on most Kodak Carousel projectors.

See Kodak Carousel projectors at your photo dealer's. The 600H shown is less than $115.

Price is subject to change without notice.



# Kodak Carousel projectors

# POTTERY LOVERS

A group of fifteen outstanding United States potters, primarily from the Appalachian region, have been selected to display their superior creative work to collectors of pottery through Museum Crafts Association.

As a Patron of Museum Crafts, you will receive quarterly color brochures showing works available and featuring biographical and professional information about each artist. Prices will not exceed $200 for an individual piece and will in most cases be less than half that. There is, of course, no obligation to purchase.

Because we don't like to clip our *Smithsonian,* we haven't included a coupon. But if you are a lover of fine American pottery, we invite you to send your name and address with $10 as a membership fee (refundable if you are in any way disappointed with your first brochure) to MUSEUM CRAFTS, INC., Box 2872, Durham, North Carolina 27705.

With certain elephant species on the endangered list, this mother protecting her child is a gentle reminder that man must care for the world's wildlife as well as his immediate environment. Open your hearts to them both and you'll be rewarded forever. After all, elephants never forget. Hand cast in solid grey hydrastone. 7" high. **$15.00**

**GOOD MORNING FARM**

**Box S10 Stow, N.Y. 14785 716/763-1772**

Include $1.95 shipping. N.Y.S. res. add tax.
check, M.O., BAC, or M.C. credit cards
Send 25¢ for catalog.

The 1977 audience will welcome back Dewey Balfa (above with fiddle), who has contributed to the preservation of traditional Cajun music of Louisiana.

*By Ralph Rinzler and Peter Seitel*

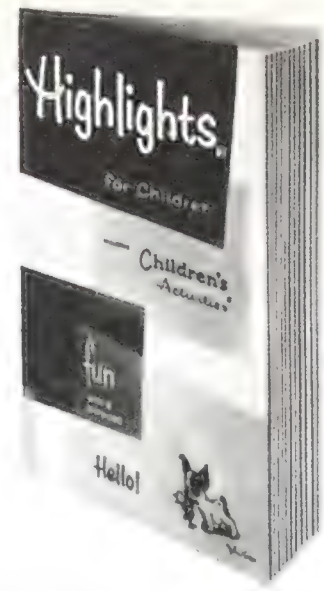
# Cajun fiddles, Hindustani *veenas* and dulcimers

*Smithsonian's Folklife Festival observes its tenth anniversary both in and around the museums*

*I can see a great change in the last ten years. When we went to the first festival, people thought it was just an occasion to bring the Cajuns up to be laughed at. I can remember people saying, "What are these boys going up there for?" I was so moved performing for 17,000 people. If I was to die, I'm very pleased to know that Cajun music has a place in this country.*
Dewey Balfa

Driving toward the Texas border on U.S. 10 out of New Orleans ten years ago, one would not have heard any of Balfa's kind of music over the radio. On the road that stretches through bayou country and rice fields, the radio airwaves carried only one

# Would you pay $9.95* for a child's gift that won't be outgrown, broken, worn out, lost or forgotten six weeks after Christmas?




The name of this unique gift is HIGHLIGHTS FOR CHILDREN. It is the most honored, and possibly the most beloved, monthly children's magazine in the world. And, in a day and age when fads in toys and trinkets and clothes appear and vanish almost before you turn around, HIGHLIGHTS FOR CHILDREN could be one of the most exciting Christmas presents you will ever give.

For HIGHLIGHTS is not only different from the usual gift; it is different from other children's magazines as well.

*Its intent is not only to delight and entertain, but to challenge and teach.* The editors are nationally known experts in child psychology and family life; they firmly believe that growing children find their greatest pleasure in thinking, creating, and surprising themselves and their parents by reaching intellectual heights no one had ever suspected they could.

Eleven times a year, HIGHLIGHTS FOR CHILDREN brings its young subscribers good fiction and poetry; authoritative articles on science, music, math, nature, astronomy and famous people; lessons in good manners; craft projects; puzzles, games and just plain fun. It avoids any suggestion of violence or crime in words or pictures. Each issue is 42 or more pages long, bound in sturdy tagboard. The type is large and easy-to-read. There are no coloring or cut-out pages, for HIGHLIGHTS is meant to become part of each young subscriber's permanent library.

HIGHLIGHTS *appeals to a wide age range:* from tots of 2 who love to listen to its stories and do the simple preparation-for-reading exercises within its pages . . . to 12-year-olds who find the biographies and science articles prime sources for school reports. A special annual Resource/Index issue, coming at the end of each calendar year, organizes each year's 11-issue collection as a reference source, to be turned to again and again as the child's interests and reading ability expand.

HIGHLIGHTS FOR CHILDREN is not available on the newsstands but is sold by subscription only, for the editors feel that part of its value is its continuing program of fresh, imaginative material.

*It is sent addressed in the child's name, something all the child's own in a world where so much seems to be decided by adults.* Where there are several children in the family, a single subscription may be shared in several names.

For a relatively small price, HIGHLIGHTS brings your love and remembrance to children you treasure . . . not just at Christmas, but eleven times a year. The contribution HIGHLIGHTS FOR CHILDREN can make to a child's development, however, as it reinforces reading as a pathway to pleasure and information, is a gift that will last a lifetime.

*This year give the gift that won't be forgotten: give* HIGHLIGHTS FOR CHILDREN.
*__Christmas gift rates:__ Only $9.95 for each 1-year subscription (11 issues) + 10¢/copy postage & handling ($1.10). Price includes free hand-signed Christmas gift card for every child on your list. (Gift rate valid to Dec. 25, 1977.) Please add $1 per subscription for gifts sent to Canada, or $2 elsewhere outside the U. S.*

Please send a subscription to HIGHLIGHTS FOR CHILDREN as my gift to:

_____
*child name(s)* *age(s)*

_____
*address* *apt. no.*

_____
*city* *state* *zip*

*Sign gift card "from*_____"

11 • NSZN

_____
*child name(s)* *age(s)*

_____
*address* *apt. no.*

_____
*city* *state* *zip*

*Sign gift card "from*_____"

11 • NSZN

_____
*your name*

_____
*address, if different from child's*

_____
*city* *state* *zip*

$ ..... is enclosed for ..... gifts.

☐ Bill me (no need to pay till Jan. 1)
☐ Charge to my bank credit card, account number:

_____
☐ BankAmericard ☐ Master Charge
Interbank no. _____

*(For additional orders, please give us the information on a separate sheet of paper.)*

Satisfaction guaranteed or money refunded.

Highlights® for Children
**2300 W. 5th Ave., P.O. Box 269, Columbus, Ohio 43216**

• • RM-W • NDZ 45

Chesapeake Bay Trading Co.

# 100% COTTON

## THE ONLY WAY TO GO

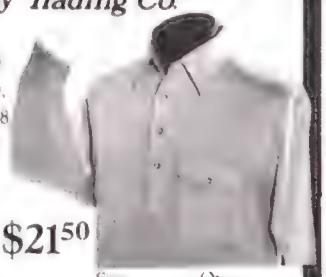
The search is over! The exceptional shirt has been found. Until now, for every man who loved all cotton knit shirts, there was a woman who hated caring for them. We are proud to offer a 100% cotton shirt that is truly easy-care, that retains its shape, wash after wash; and it's *guaranteed* not to shrink out of shape.

In contrast to shirts containing synthetic fibers, our shirt allows the body to 'breathe' while providing the warmth and comfort that is exclusive to cotton.

It features a stand-up dress shirt type collar and is made of 2-ply cotton lisle with the new durable-press treatment that eliminates pilling, resists abrasion, allows easier stain removal, and assures longer garment life. Great for playing golf or watching football games!

**Special Offer:** Buy more than one and save. Simply deduct $1.00 for each additional item ordered.

Chesapeake Bay Trading Co.
P.O. Box 5879
Pikesville, MD 21208



**Sizes:** (S) 34-36, (M) 38-40,
(L) 42-44, (XL) 46-48

**Colors:**

| | |
|---|---|
| Navy | #14061 |
| Dk. Green | #14063 |
| Bone | #14066 |
| Tan | #14067 |
| Brown | #14069 |

$21.50

Color ____ Style No. ____ Size ____ Qty ____
Color ____ Style No. ____ Size ____ Qty ____
Name
Address
City ____ State ____ Zip ____
Check ☐ or Charge: Master Charge ☐ Bank Americard ☐
Card Number ____ Exp. Date ____
Signature

**Unconditional Money-Back Guarantee** 77095

"The Guests Keep Coming Back Resort"

For almost a quarter of a century, the Beach Club Hotel has retained a discriminating clientele unlike any other in Southwest Florida. A pristine white sand beach on the Gulf of Mexico; mammoth seaside pool; our own 18 hole championship golf course and tennis courts; splendid restaurants and cocktail lounge with nightly entertainment; intriguing shops and all bolstered by 360 beautifully appointed rooms and suites. A self-contained vacation resort like none other in all of Florida. The quiet, refined atmosphere of the Beach Club could easily prove to be the most rewarding and satisfying holiday you've ever experienced.

The
BEACH CLUB HOTEL
in Naples

Write or phone:
Clifford F. Smith,
General Manager

851 Gulf Shore Blvd., North
(813) 261-2222
Naples, Florida 33940

A thresher powered by coal-fired steam engine will be on the Mall for the Festival.

sort of local music—the "modern" Cajun sound, played on electric instruments.

The older tradition of Cajun music seemed in danger of extinction. Performers would not play the music publicly because it was "old-fashioned," and to be modern seemed to be the only possible choice for Cajun performers.

Dewey Balfa made his first appearance outside Louisiana at the 1964 Newport Folk Festival. Then he brought his haunting modal tunes and venerable French texts to a wider audience—the Smithsonian's Folklife Festival in 1969. The fact that national recognition can revive folk traditions in danger of extinction has been at the heart of the Smithsonian's Folklife Program since its start in July of 1967.

The second decade of Folklife programs begins with the 1977 Festival, October 5 through 10. The basic goals of the Festival remain, but it will also embark in several new directions. Most evident among the changes is the Festival location itself. This year it has been moved both into and around the Smithsonian Institution museums on the Mall. The Festival actually began here in 1967, but moved in 1973 to a more expansive

*Ralph Rinzler is director of Smithsonian Folklife Program and Peter Seitel consults as anthropologist and folklorist.*

Rosenthal **Roundbottoms**
**Pep Up The Party**

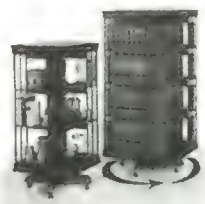
The quintessence of understated continental humor sparkles through these inspired hand-cut "Schnapps" glasses (2 oz.; 2¼" high) for discriminating after-dinner drinkers. Always about to fall, never falling, they prove irresistible to your guests.

Delightfully designed for Rosenthal, the aristocrat of European crystal, their unbalanced balance is artistic, impeccable and comic. Happy or money back. **2 for $18.00; 6 for $49.00** plus $1 for ship., ins., hand. OH res. 4½% sales tax.

**BETTER IDEAS**
2226 Arbor, 108-B, Dayton, OH 45439

*a brand new very old idea...*

*"THE REVOLVING BOOKCASE"*



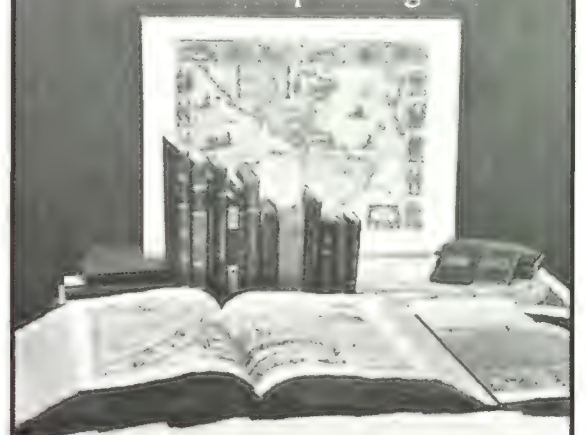
Perfect for today's active executive and yet it dates back to the days of Thomas Jefferson and other great men like him. ELEGANT AND PRACTICAL

(A) THE HOLMES
22"x22"x48" Total shelf space 144"
List Price $399.00
SALE PRICE $289.00

(B) THE MARSHALL
28"x28"x60" Total shelf space 272"
List Price $499.00
SALE PRICE $369.00

THE LAZY LAWYER COMPANY
P. O. Box 992 Dept. S-107
Bay Minette, Ala. 36507
For Speedier Service Call: (205) 937-9707

RARE MAPS AND BOOKS
Catalogs of rare books pertaining to America $2.50.
Illustrated map catalogs $3.



**Walter Reuben, Inc.**
410 American Bank Tower, Dept. S.
Austin, Texas 78701

*A limited edition of 1000 sterling silver commemorative medals*

# In Celebration of the *Silver Jubilee* of Her Majesty Queen Elizabeth II of Great Britain

*Presented by*
*the Smithsonian Institution*
*in cooperation with the Pilgrims and the*
*English-Speaking Union of the United States*

**A design personally approved by Her Majesty —**
These medals, created by the well-known English artist, Arnold Machin, bear on the obverse the profile portrait of the Queen and on the reverse the words, "In Commemoration, Queen Elizabeth II, Silver Jubilee 1977, Amicitiae Virtutisque Foedus (an alliance of friendship and virtue), Washington, D.C." The hallmark of London and the special jubilee hallmark will appear on the reverse of each medal.

**The artist —**
Other works of Arnold Machin include cameo portraits of most of the Royal Family for Wedgwood, portraits of Her Majesty Queen Elizabeth for the coins of the United Kingdom, Guernsey, the Bahamas and for the stamps of the British Postal Service. Mr. Machin is past Master of Sculpture at the Royal Academy Schools and Head of the Stoke School of Art. He is currently a member of the government committee for assessing colleges of art in the United Kingdom.

**In support of fellowships —**
The medals will be sold only to subscribers at $125 each ($50 is tax deductible as a charitable contribution). All proceeds above production costs will be utilized to support fellowships to be awarded to young American scholars for study in Great Britain and to an equal number of British scholars who wish to visit the United States.

**A unique opportunity for collectors —**
The Silver Jubilee medal is struck in Birmingham, England, by Fattorini & Co. The 2½" sterling silver medal weighs 93 grams, and is delivered in a royal blue leatherette case.

**United States Silver Jubilee Committee:**
S. Dillon Ripley — Chairman

*Former U.S. Ambassadors to the Court of St. James:*

| | |
|---|---|
| Anne Armstrong | David Bruce |
| Elliot L. Richardson | John Hay Whitney |
| Walter Annenberg | W. Averell Harriman |

*Other Members:*

| | |
|---|---|
| Silvio Bedini | John I.B. McCulloch |
| Barry Bingham, Sr. | Alicia W. Milholland |
| Hugh Bullock | Paul N. Perrot |
| Sharman Douglas Hay | Alton E. Peters |
| Lisa Taylor | John Russell |
| Paul Mellon | Marvin Sadik |

---

**To order the Queen's Silver Jubilee Medal—**
*Write:* Smithsonian Institution
Room 2467, Arts & Industries Building
Washington, D.C. 20560

Enclosed is a check payable to the *Smithsonian Institution Jubilee Medal* for $125 (of which $50 may be considered a tax deductible charitable contribution to the Smithsonian Institution).

Name _____

Street _____

City _____ State _____ Zip _____

# Flying High.

A sleek, curved line against a boundless sky, the eagle soars, alone. Superb art reproduction of the mixed media original by noted wildlife artist, George Founds. 23" x 34". Black and sepia on white. Each print signed and numbered by the artist. $75.

Edition limited to 650

Goldeneye Editions Inc.
P.O. Box 60, Dept. SM-10
Flourtown, PA 19031

☐ Please send me _____ print(s) of Soaring Eagle at $75 each, together with more information about the artist and his work. $ _____ Payment enclosed.
Maryland residents please add 5% sales tax

☐ Please send me more information about the artist and his work and other limited edition prints available.

Goldeneye Editions Inc.
P.O. Box 60, Dept. SM-10
Flourtown, PA 19031

Name _____

Address _____

City _____ State _____ Zip _____

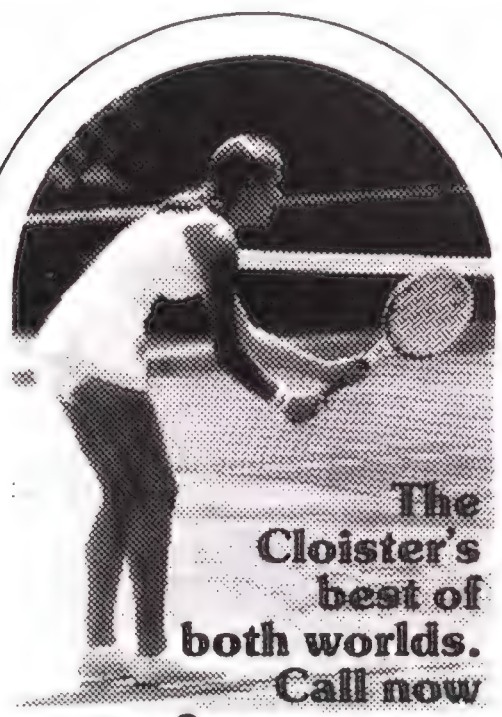
African Diaspora will bring together the cultural heritage of black Americans.

location around the Reflecting Pool in front of the Lincoln Memorial. That move was to accommodate the expanded program which prepared for, and launched, the Bicentennial Festival—a 12-week-long celebration of America's ethnic, occupational and regional cultural heritages.

The move this year is more than geographical, for the 1977 program will feature living cultural traditions that relate directly to museum collections.

In the popular "Nation of Nations" exhibition in the Museum of History and Technology, for example, Americans who actually lived and worked with the artifacts on display there will come and share their experiences. In the schoolroom exhibit, former teachers, students and employees of the Cleveland schoolhouse from which the room comes will share the children's lore, classroom decorum and tales of heroes and antiheroes from their school days. In the same museum, veteran railroad workers will climb aboard and around the giant 1401 Southern Railway steam locomotive and explain what it was like to work on engines in the "Age of Steam." Hispanic-American craftworkers will fashion wood furniture with ornamental inlay, and demonstrate other crafts like those found in the "Colonial Survivals" exhibit.

All of these performers, and the other

The Cloister's best of both worlds. Call now & come now.

Yes, Autumn's popular at The Cloister and Sea Island's world-famous golf and tennis facilities. But give us a call. There's likely still room for you too. Come prepared to enjoy five miles of unspoiled beach, your own beach club, pools, skeet, riding, cycling, nightly dancing and marvelous dining. Call 912-638-3611. Out-state toll-free 800-841-3223. The Cloister Hotel, Sea Island, Georgia 31561.

Sea Island

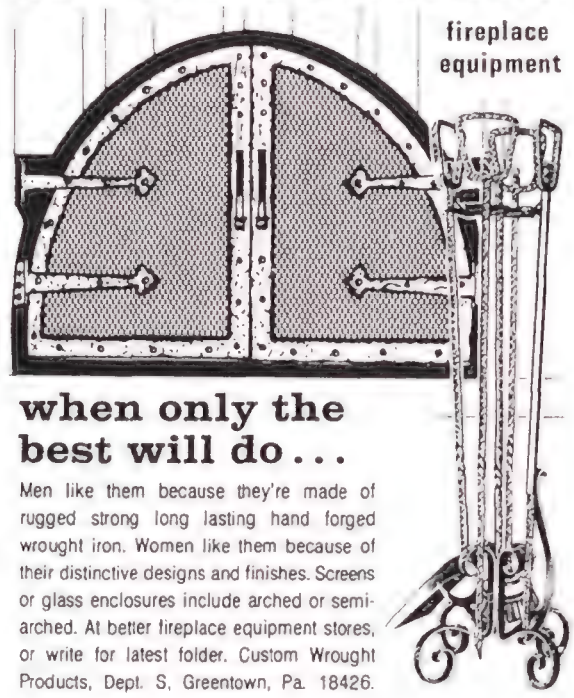
**Men's Wide Shoes**
EE to EEEEEE • Sizes 5-13

*WARM BOOTS!*
Top quality, popular prices, full money-back warranty
Send for FREE CATALOG

Not sold in stores

HITCHCOCK SHOES, INC.
Dept. 21J, Hingham, Mass. 02043

**REICHMAN**
fireplace equipment



**when only the best will do . . .**

Men like them because they're made of rugged strong long lasting hand forged wrought iron. Women like them because of their distinctive designs and finishes. Screens or glass enclosures include arched or semi-arched. At better fireplace equipment stores, or write for latest folder. Custom Wrought Products, Dept. S, Greentown, Pa. 18426.

Festival craftworkers and musicians as well, are actual members of the communities whose folk culture they present. There are no trained actors or "interpreters of tradition." The traditions that will bring life to the museum objects are currently practiced by—or are within the living memory of—the very people who present them.

This year staff members of the Family Folklore project again will interview the visitors who wish to volunteer the lore of their own families. The oral traditions of family history, heroes and humor show how lore is preserved in a group and how it incorporates significant events in a person's life.

Hindustani musicians will perform on the *veena,* the classical forerunner of the *sitar,* and the *pakhawaj,* a barrel drum from which the *tabla* is derived. During their visit, the musicians will also work with Smithsonian scholars to identify Indian instruments which the Museum of Natural History staff has collected over the past half century.

The hammered dulcimer, an instrument which originated in Persia during the tenth century and spread to Europe and the Orient, will be used in performances by musicians from the Anglo-American tradition.

Five Native American tribes will be represented in a program that illustrates the rich variety, intricate forms and intrinsic beauty of American Indian music.

New directions in the Festival are not only to be found inside the museums. Outside, on the Mall, the Festival will look at various forms of energy used in producing and preparing food. The methods will range from Native American techniques which predate European contact through Colonial-style baking to the use of a modern microwave oven.

An 85-year-old Northern California Yurok, Ella Norris, spent the late summer preparing the redwood twigs she will use to suspend fresh salmon over an open birchwood fire. Two Wampanoag Indians from Cape Cod are more than 65 years younger than Mrs. Norris, but also continue ancient traditions. Paula and Russell Peters will use fire-heated rocks to steam shellfish and vegetables on a bed of moist seaweed.

In mid-July, the Smithsonian field researchers purchased three acres of wheat from a Pennsylvania Amish farmer whose reaper is drawn by a team of four horses.

While youre waiting for your ship to come in,
it helps to sample some of the cargo.
Johnnie Walker
Black Label Scotch
YEARS 12 OLD
12 YEAR OLD BLENDED SCOTCH WHISKY, 86.8 PROOF BOTTLED IN SCOTLAND IMPORTED BY SOMERSET IMPORTERS, LTD., N.Y.

# It's Speed Learning!

Have you ever wished you could read and learn faster? Do you have too much to read and too little time?

Speed Learning can teach you to read and learn faster and better. The average person becomes 108% more efficient. The ability to read-comprehend-remember and use twice as much knowledge and information is very important to you.

Speed Learning has been approved with highest honors and used by schools, colleges, universities, corporations and branches of the U.S. Government.

A 'teacher on casettes' and excitingly different study books will teach you a completely new way to read and think. You'll learn, step-by-proven-step, how to increase your reading skills and speed so that you understand more, remember more and use more of everything you read.

Whether you're 17 or 70 you'll find Speed Learning exciting because it's easy to learn, logical, practical and the benefits last a lifetime. Within two weeks you'll be truly impressed with how much you've learned and how differently you read.

**EARN PROFESSIONAL COLLEGE CREDITS**

- **AMERICAN MEDICAL ASSOCIATION**
  Category I – 15 Credit Hours
- **FOUNDATION FOR ACCOUNTING EDUCATION**
  20 Continuing Professional Education Credit Hours
- **COLLEGE CREDIT**
  3 credits from the National College of Business

Details and registration forms with each program.

**FREE 10-DAY EXAMINATION***

learn INCORPORATED
113 Gaither Drive SM-1
Building S
Mt. Laurel, N.J. 08054

☐ YES! Ship one Speed Learning program at $79.95 plus $3.00 for handling and insured delivery

I understand that, if after 10 days FREE examination I am not delighted in every way, I may return the materials and all money will be refunded or credit card charges cancelled

☐ Check or Money Order Enclosed
☐ Charge my Credit Card
☐ Bank Americard ☐ Master Charge ☐ Diners Club ☐ American Express
Interbank # _____

Card # _____ Exp. _____

Name _____

Address _____

City _____ State _____ Zip _____

N.J. residents add 5% sales tax * Subject to credit approval

Tax deductible under most circumstances

This year, as in the past, fascinated eyes will follow craftsman's hands.

At the Festival, the grain will be separated by a thresher powered by a coal-fired steam-traction engine. The grain will be stone-ground on a mill powered by a turn-of-the-century gasoline engine. Loaves of bread shaped by hand will bake in a Colonial-style brick oven.

But the Festival has not altogether sailed off in new directions. The sights, sounds and smells characteristic of past Festivals—fiddlers, banjo pickers, ballad, blues and gospel singers, basket weavers, traditional cooks and street vendors—will return as part of the African Diaspora and Virginia folklife exhibitions.

Looking beyond this year's Festival, the Smithsonian staff plans programs using the model of fieldwork and Festival presentations developed over a ten-year period. The newly established American Folklife Center in the Library of Congress and the Folk Arts Program at the National Endowment for the Arts will collaborate with the Smithsonian Folklife Program to reach beyond Washington to other communities.

This concern for the continued survival of folk culture—a kind of parallel to the concern for endangered species in the natural environment—is not a new one. It dates back at least as far as the eminent English scholar, Cecil Sharp (1859-1924). Music tutor to the Prince of Wales, he


**CUDDLE UP**

**with our FREE CATALOG of European-style DOWN QUILTS**

Cotton or cotton blend fabrics, filled with your choice of duck or goose down. Decorator sheetcase covers and puffy pillows, too. Our quality is guaranteed. And our prices are cozily low. Send us your name and address and we'll rush our catalog.

WARM THINGS

DEPT SO – 36 FRONT STREET
SAN RAFAEL, CALIFORNIA 94901 (415) 453-4262
48 HR SERVICE—MC & BA ACCEPTED

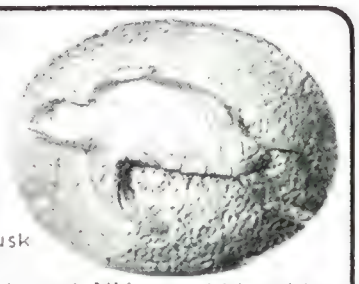
**SEND 30 CENTS** 32 color pages of fashion accessories, jewelry, pillows, ties, cigarette boxes, ashtrays, vases, glasses, plaques, desk accessories, coasters, books, posters, greeting cards, aprons, placemats, napkins, dinnerware

THE BROOKLYN MUSEUM
GALLERY SHOP **1977 CATALOG**
Dept B, 188 Eastern Parkway, Brooklyn, NY 11238

COLLECTOR EDITIONS OF
**CAVE ART**
20,000 B.C.
OF FRANCE, SPAIN & AFRICA: HAND-SCREENPRINTED
FROM $36.
gallery of prehistoric art
16 PAGE COLOR BOOKLET $3. 20 EAST 12th. N.Y.C. 10003

**ENDANGERED ANIMAL BELT BUCKLES**

*Solid Bronze*
whales • wolf • koala • tiger • orang-utan • peregrine falcon • polar bear • musk ox • green turtle



**$14.95** each pp. No cod. NY res add local tax.
*Satisfaction Guaranteed*
*educational images* S-7U, Lyons Falls, N.Y. 13368
*Send large stamped envelope for detailed folder.*

**The DROVER by Akubra®**

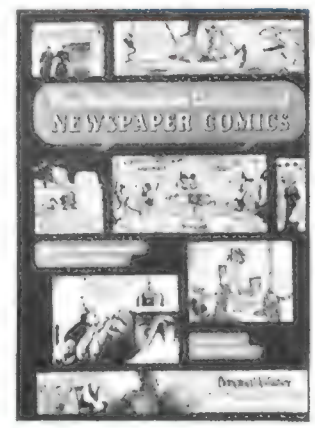
This rugged outdoorsman's hat from Australia is made from Akubra's finest Imperial quality pure fur felt. Color deep fawn, 3⅝ inch brim, with hooks inside the crown for a chin strap. Shown with a two-tone braided calfskin band.

| | |
|---|---|
| **DROVER, ribbon band** | **$35.00 ppd** |
| **For Two-Tone Band** | **add $8.50** |
| **For Braided Chin Strap** | **add $5.00** |

State size - 6¾ through 7⅞
Send for our unique catalog
Visit our Seattle store at 1523 N.W. Ballard Way
**AUSTRAL ENTERPRISES**
Box 70190, Seattle, Washington 98107

# 18 WAYS TO SAY "HAPPY HOLIDAYS" from the Smithsonian Institution Press

Make your holiday shopping a breeze, while selecting a gift that will combine enjoyment with lasting value. This array of beautiful books covers a multitude of subjects . . . something for everyone who loves to read. Each book is handsomely bound and printed and will make an ideal gift this holiday season. Browse below and send us your order today to assure prompt, pre-Christmas-rush delivery. *(20% off to Smithsonian Associates)*




## The Smithsonian Collection of Newspaper Comics 1

*Bill Blackbeard and Martin Williams, Editors*

The American newspaper comic strip is an innovative and creative cultural accomplishment of the United States, one that has spread around the world. This magnificent volume covers 80 years of newspaper comics and contains 765 daily and Sunday strips with more than 100 pages in full color. Included in the Collection are the "Yellow Kid of 1896" — the first strip to attain definitive form — "Little Nemo," "Flash Gordon," "Mutt and Jeff," "Gasoline Alley," "Bringing Up Father," "Dick Tracy," "Pogo," "Peanuts," "Doonesbury," and many, many others. 336 pages 10 x 14 $27.50 cloth $12.50 paper

**A BOOK-OF-THE-MONTH CLUB SELECTION** *Available after January 1, 1978.*

---

## Charles A. Lindbergh: An American Life 2

*Tom D. Crouch, Editor*

The five essays in this little book offer new insights into the character of the best-known airman of his generation. The 40 photographs, many previously unpublished, were selected from Lindbergh's own collection.

c. 128 pages 40 illustrations $7.95 cloth $2.95 paper

## The Thomas Eakins Collection of the Hirshhorn Museum and Sculpture Garden 3

Phyllis Rosenzweig Foreword by Abram Lerner

Thomas Eakins, overshadowed in his lifetime by such contemporaries as James McNeill Whistler and John Singer Sargent, is recognized today as a major figure in the history of American painting—a powerful, complex, and individualistic artist.

240 pages 252 illustrations, 6 in color $25.00

## Rauschenberg 4

*National Collection of Fine Arts*

Robert Rauschenberg, long the enfant terrible of avant-garde art, is perhaps the most influential American artist now active in contemporary American art. The unique and varied ways in which he has expressed his creative impulses are examined in this handsome volume of his major work from 1949 to 1976

216 pages
237 illustrations, 20 in color
$25.00 cloth $15.50 paper

## The Golden Door: Artist-Immigrants of America, 1876-1976 5

*Cynthia Jaffee McCabe*
*Introduction by Daniel J. Boorstin*

A beautiful and impressive volume which focuses on a group of immigrant artists—sculptors, painters, architects, and photographers—who contributed significantly to American art within the past 100 years

432 pages 257 illustrations, 39 in color $25.00

## Worthy of the Nation: The History of Planning for the National Capital 6

*National Capital Planning Commission*
*Frederick Gutheim, Consultant*

An insiders' illustrated history of Washington as a planned city, this book brings the nation's capital to life—as immediately seeable a place in the 1790s as it is in the 1970s. Many of the almost 300 illustrations, 50 of them shown as full-page reproductions, were taken especially for this book. 416 pages 274 illustrations $22.50 cloth

## The Black Presence in the Era of the American Revolution, 1770-1800 7

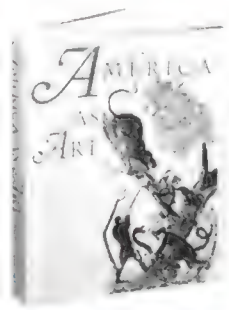
*Sidney Kaplan*

The participation of blacks in the American Revolution, as well as their social situation, slave and free, is poignantly described in this fascinating book

241 pages 109 illustrations, 9 in color $9.95 paper

## America as Art 8

*Joshua C. Taylor*




A National Book Awards finalist, this beautifully illustrated book examines various ways in which certain ideas and attitudes of and about America became inseparable from the country's art and, conversely, how in some instances art itself became an identifying mark of America

320 pages
346 illustrations, 10 in color
$25.00

## The Sewing Machine: Its Invention and Development 9

*Grace Rogers Cooper*

This handsome book is based on the Smithsonian's collection—the world's most comprehensive collection of American-made sewing machines

238 pages 216 illustrations $14.95

## American Printmaking: The First 150 Years 10

*Wendy J. Shadwell*
Introduction by J. William Middendorf II

Early American prints from the years 1670 through 1820 are described and reproduced. Included are portraits of prominent personalities and views of Revolutionary War battles. 180 pages illustrated $15.00

## Zoobook 11

*National Zoological Park, with photographs by Jan Skrentny*

A beautifully illustrated book with more than 100 color photographs of animals and behind-the-scene glimpses of the National Zoo 80 pages 146 illustrations, 104 in color
$8.95 cloth $3.95 paper

## The Indian Legacy of Charles Bird King 12

*Herman J. Viola*
*Introduction by John C Ewers*

An artist of the pre-camera era, Charles Bird King rivaled George Catlin as a portrait painter who recorded the features and costumes of American Indians

152 pages
132 illustrations, 44 in color
$19.95

## "The Dye Is Now Cast" 13

*Lillian B. Miller*

By focusing on portraits and biographies of the men and women who influenced the events leading to the American Revolution, this book tells the story of the crucial two years from the first meeting of the Congress in 1774 to the Declaration of Independence in 1776.

328 pages illustrated $25.00

## The New Deal Art Projects: An Anthology of Memoirs 14

*Francis V. O'Connor, Editor*

Ten artists and former administrators tell of the cultural contribution made by the famous WPA Federal Art Project and the various Treasury Department art programs.

339 pages illustrated $17.50

## The Outdoor Sculpture of Washington, D.C.: A Comprehensive Historical Guide 15

*James M. Goode*

More than 500 photographs illustrate this comprehensive survey of Washington's outdoor sculpture.

528 pages illustrated $8.95 paper

## Catalogue of the Hans Syz Collection. Volume I: Meissen Porcelain and *Hausmalerei* 16

*by Hans Syz, J. Jefferson Miller II, and Rainer Rückert*

This superb volume provides a comprehensive visual and written record of Meissen's rich productivity from its beginnings around 1710 to the 1760s. 607 pages
492 illustrations, 38 in color
$50.00

## Air Traffic Control: The Uncrowded Sky 17

*Glen A. Gilbert*

The author contends it is the system that is crowded, not the airspace. He then considers the outlook for the future

160 pages illustrated $12.50

## Windows in the Sea 18

*Marion Clayton Link*

The step-by-step evolution of an underwater research vessel is told in a readable, knowledgeable way as man seeks to go deeper and deeper into the oceans' depths

198 pages illustrated $12.50

---

**The Smithsonian Institution Press,** P.O. Box 1641, Washington, D.C. 20013

Please rush me the following selections: (use numbers above) _____.
Check, money order, or credit card accepted. Charge to my ☐ BankAmericard ☐ American Express ☐ Master Charge. Card No. _____ Expires _____.

Signature _____

Smithsonian Associates: deduct 20% off the list price of any book(s) purchased. Please add $1.25 postage and handling for the first book and 50 cents for each additional book.

Name _____
Address _____
City _____ State _____ Zip _____

# The leading magazine in the personal computer field

*BYTE* is the magazine for the creative home computer experimenter. *BYTE* tells you everything you want to know about personal computers, including how to construct and program your own system.

Home computers are now practical and affordable. Low cost peripherals have resulted in more hardware and software, more applications than you could imagine. *BYTE* brings it all to you. Every issue filled with stimulating, timely articles by professionals, computer scientists and serious amateurs.

Fill in the coupon today. Read your first copy of *BYTE;* if it's everything you expected, honor our invoice. If it isn't, just write "CANCEL" across the invoice and mail back. You won't be billed, and the copy is yours.
*Allow 6 to 8 weeks for processing.*

© Byte Publications, Inc. 1977

BYTE
The Small Systems Journal

**BYTE Subscription Dept.** 62D
P.O. Box 361 Arlington, Mass. 02174 U.S.A
*Please enter my subscription for*

☐ One year U.S.-$12 ☐ Two years U.S.-$22 ☐ Three years U.S.-$32
☐ Canada or Mexico-$17.50 ☐ Europe *(Air Delivered)*-$25
☐ Surface delivery to all other countries except Europe, Canada or Mexico-$25
*(Air delivery available on request)* Please remit in U.S. funds
☐ Check enclosed *(Bonus: one extra issue)* ☐ Bill me ☐ Bill Bank Americard
☐ Bill Master Charge

Card Number——— Expiration date———
Signature——— Name *(please print)*———
Address———
City——— State/Country——— Code———



# So you think you've cruised it all.

Then let us drop a name or three. St. Eustatius. Iles des Saintes. St. Barthelemy. That's only a few places you'll be going this winter if you take one of our 14-day Leeward to the Orinoco Cruises out of San Juan. You'll be aboard our Stella Oceanis, with all the comforts of a larger ship; small enough (room for 298) to follow a yacht-like itinerary. Then we're highlighting each cruise with a 180-mile journey up the Orinoco River to Ciudad Guayana. An optional excursion takes you by plane to the tallest waterfall in the world, Angel Falls. For all the details, see your travel agent or send for our brochure.
P.S. We also have a 9-day Christmas and a 9-day New Year's Cruise. Greek registry.
Sun Line Cruises, One Rockefeller Plaza, New York, New York 10020. Room 315S

# Sun Line Cruises


persistently collected dance and music in County Somerset in the first decade of this century. He found ancient English traditions which were thought to be extinct in Britain.

Sharp's insight into the process of cultural preservation was to bring together traditional performers, the wider public and scholars. Encouraging the creative interaction of these three groups within a national institution was the genius of Sharp's work. This interaction has been the motivating principle of the Smithsonian Folklife Program and provides the basis for planning future festivals and collaborative outreach projects.

One spin-off from the Smithsonian Folklife Program is a museum exhibition which opened with a concert of traditional music on September 9 at the Mississippi State Historical Museum in Jackson. Working with research guidelines for our 1974 Festival, a folklorist and a photographer not only brought together a significant part of the Mississippi folklife presentation that year, but also devel-

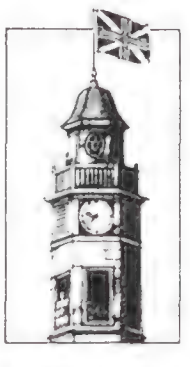
Basketmaking will be seen on the Mall. Photograph of Taft Putnam is from

oped their study into a three-year folklife survey of the southwestern part of Mississippi. It is the first comprehensive regional survey of contemporary black cultural materials in the State Museum.

The Festival's orientation toward cultural preservation has remained a significant focus. Over its ten-year history, it has also developed programs that speak to the traditions associated with occupations, with the geographical regions of America, with children, with family groups, with changing life-styles of Native Americans and with the forced migration of Africans to the New World. Traditional culture is the Folklife Festival's primary concern because it needs to be preserved in the face of the homogenizing effect of the mass media, but is not a value judgment against other, more popular forms. The experience of Dewey Balfa indicates that, given a proper forum, traditional culture can enjoy enthusiastic support. The Folklife Program will continue to find talented keepers of tradition and present them to a wider and wider public.

Mississippi State Historical Museum show
resulting from Festival field research.

# Walk one mile and 200 years into history.



Williamsburg's mile-long Duke of Gloucester Street leads you deeply into America's past.

At one end, you'll find the oldest academic structure in continuous use in British America, the Wren Building at the College of William and Mary. At the other, the Capitol, stately symbol of the Crown's power in its largest colony.

In between are taverns and townhouses, craft shops and quiet gardens.

During this, the Leisure Season, give yourself time to walk this historic mile. And to continue your journey through the past, enjoy the timeless pleasures of a Colonial Williamsburg hotel. Here in the midst of the Historic Area, you'll find gracious accommodations, festive dining and the enjoyment of golf and tennis.

Discover the past, for a bright new present, this winter in Colonial Williamsburg.

COLONIAL Williamsburg
WILLIAMSBURG, VIRGINIA

**Make reservations now.** *Inquire about our special Leisure Season plans at Williamsburg Inn, Lodge, and The Motor House. Write Reservations Manager, Box CN, Williamsburg, Va. 23185; or call (804) 229-1000; New York, (212) 246-6800; Washington, 338-8828.*

*Goose down keeps a lady warm*

Luxurious warmth and light weight make this lovely fitted robe ideal for chilly mornings, cold nights and lounging. Soft, friendly-feeling Trynyl. Antique gold-tone buttons. Tie belt. Patch pockets. Cuffed sleeves. **Colors:** Sky Blue, Ocean Green, Salmon Pink, Maize Yellow. **Sizes:** S(8-10), M(12-14), L(16-18). #0174 Ladies' Fitted Robe $75.00 ppd.
**Goose Down Sox** Perfect to wear around home, make toasty warm bed sox, great travel mates. Nylon taffeta fabric. **Colors:** Red, Winter Blue, Powder Blue, Taupe. **Sizes:** Women's 5-13. Specify shoe size and we will supply the proper fit. #0123 Sox $9.95 ppd.
***Order by mail or telephone toll free 1-800-426-8020.***

**Order Today!**
**Money Back Guarantee!**

Enclosed is my check or money order for $_____
(Add sales tax where applicable.)
Please charge my ☐ Master Charge ☐ Visa
☐ American Express "Good Thru"_____
Card No._____
☐ #0174 Robe. Size_____Color_____
☐ #0123 Sox. Size_____Color_____
Name_____
Address_____
City_____
State_____ Zip_____
☐ Send me FREE your color catalog of unique outdoor products.

Eddie Bauer®

Dept. CSM, Third & Virginia, Seattle, WA 98124

# *Book reviews*

*An American's Guide to Britain*
Robin W. Winks
(Scribner's, $10.95)

Without consulting the weather charts, trusting to the general wisdom of past experience and, with a little bit of luck, this is, or should be, a good month for a holiday in Britain, never mind which month it happens to be.

Should you be going, and even if the weather doesn't live up, quite, to your hopes, it would be wise to take along Robin Winks' book, the best travel guide on the subject since Ruth McKenney's and Richard Bransten's *Here's England,* first published in 1950, thrice revised, and still available as it deserves to be.

And, even if you aren't going, this book makes for not only informative but entertaining reading as well, something so difficult to accomplish that it must be remarked upon whenever it happens, no matter the field. It is that well written, that intelligent, that personal and, given the subject, that, rightly, idiosyncratic.

Winks, a professor of history at Yale, "recently rejoiced," the dust jacket tells us, "in a two-year spell" as Cultural Attaché at the American Embassy in London, one of the more felicitous appointments in the Foreign Service, one assumes (having been there), than most. His book is a celebration of the assignment.

The author seems to have gone everywhere, read everything and eaten in every kind of place along the way. He likes good food and knows that it can be found in Britain—frequently in the most elegant of surroundings, and with good service. He says he's eaten in all 48 restaurants which received awards of distinction in the *Good Food Guide,* and he tells you what he thinks about the ratings—and why. This he does with everything he writes about.

As the title indicates, this book points up those aspects of Britain which have an American pertinence, but it is by no means a work of ricochet chauvinism. I tested the book on an English-born lady of no little acerbity in matters relating to the mother country and she said, giving it high marks, that it was as good a job as she knew of considering it was the work of a foreigner. The British, as we all know, no matter where they have been, which is usually everywhere (and usually first), are never, ever, foreigners.

Winks' book, tastefully illustrated with 19th-century engravings and drawings, concerns itself with cathedrals, castles, country houses, gardens, national parks, art galleries, museums, and even great shops. Then London, a country in itself, is anatomized and very well, too, considering it is done in less than 50 pages. More chapters follow on a series of pretty fine tours taking from one to several days by rail, bus, car (or a combination of all), each centering on a city, county or region—there are sections on Scotland and Wales—each pointing out what connections through history and literature America or Americans may have had there, and maybe a good place or even a great one to eat, or possibly spend the night, that is worth a side trip to get to. At the end of each section is a little codicil on what to read, while stopping there, preferably, and this is one of the nicest features of any travel book I know. For Oxford, Stratford-upon-Avon and the north Cotswolds, for example, he recommends Shakespeare, of course, Max Beerbohm's *Zuleika Dobson,* Shelley, *Alice In Wonderland,* Hawthorne's *Scarlet Letter* (bits of which were written, we learn, in Oxford), Matthew Arnold's *Scholar Gypsy,* William Morris' *News from Nowhere.* While in the Cotswolds, "pause over," he urges, John Drinkwater's *Cotswold Characters.* The horse-racing mystery novels of Dick Francis are excellent fare, he later instructs, for that great track, Newmarket.

In his introduction Winks describes himself as being "a bit book-bound, nostalgic, romantic, and certainly Anglophilic throughout."

All of these prejudices are exemplified, indeed exalted, throughout the

book—an example being in his section on cathedrals (he has the nerve to choose his favorite 20): "Whenever I have visited Durham Cathedral, a massive, even dour, structure of enormous dignity, an unbidden line we all know—England, 'this precious stone set in the silver sea'—comes to me. Edward Thomas, asked in the midst of World War I what he was fighting for, bent and sifted Wiltshire dirt through his fingers, saying, 'This.' So, too, must a similar sense come to those who sit in the meadow downslope from Ely Cathedral, on a summer day, with cows wandering across the view. The cathedrals are essential to an understanding of England."

Winks is the kind of a man who will tell you, while in King's Lynn, to buy a copy of Fanny Burney's *Evelina* or her *Diary* "to read this night" for she was born there in Chapel Street.

In Norwich, if you go to the Royal Hotel, "it is said that you may obtain samphire (sam-fer) there. Since it is sea grass cooked and buttered, you may not wish to find it."

Quite right, Winks, quite right.

—*Bennett Schiff*
Board of Editors

*Black Culture and Black Consciousness*
Lawrence W. Levine
(Oxford University Press, $15.95)

Gunnar Myrdal, in his classic *An American Dilemma,* concluded that the culture of American blacks "is a distorted development, or a pathological condition, of the general American culture." Nathan Glazer and Daniel Moynihan, following their 1963 study of New York City ethnic groups, stated flatly that "the Negro is only an American, and nothing else. He has no values and culture to guard and protect."

This valuable book contradicts these conclusions. It takes the reader on a tour through some of the important and fascinating areas of the mind and thought of black Americans during 200 years.

The spoken, sung and played expressions of blacks are here in profusion, from *anansi* (spider) fables of West Africa to Redd Foxx and Moms Mabley on TV, from African chants to Nina Simone and Duke Ellington. There is also the supernatural (magic and witchcraft) and the practical (folk remedies and medicine).


**SOLID BRASS ON SOLID OAK!**

Exact working replica of an antique English letter scale—identical in every detail to the 1860 original! Handsome for his or her desk, or a collector's shelf. Guaranteed accurate, tested brass weights of 1-oz., 2-oz. and two ½-oz. Finest polished solid brass, richly beveled and varnished base, superbly crafted with lined niches for the weights and non-mar feet. Our own proud British import. 7x3⅞x3½" high.
**9319 Letter Scale $19.98**

*Add $1.00 postage & handling, New York residents add taxes. Satisfaction guaranteed.*

**LILLIAN VERNON** Dept. T02 510 S. Fulton Ave. Mt. Vernon, NY 10550

**Quiche (Mayan) Dolls Air-mailed from Guatemala!**
Handmade in villager's cottage at Comalapa, Pancha and Pancho of the Quiche tribe. Traditionally dressed (handwoven cloth/straw basket, hat). 9". Collectibles! $15.30 pair. Flown directly from Guatemala duty-free, ppd. Bernardo's Door 26(S), 3131 SW Freeway, Houston, TX 77098.

**English Brasses**
SIX NEW ENGRAVINGS AVAILABLE
Solid brass engraving 5"x15" mounted on black fabric panel in black frame 8"x18". Twelve subjects, $30.00 each. Send for sample engraving and folder.

DECORATIVE BRASS ENGRAVINGS
90 OAK STREET. STONEHAM, MASS. 02180

TUTANKHAMUN!
NEW OFFERING
This unique TUTANKHAMUN COIN commemorates an historical sequence of events. On the face of the coin is the death mask of the Boy Pharaoh surrounded by the King's epithet in hieroglyphics. The dates 1325BC symbolize his reign and 1922AD as the discovery and unveiling of the Pharaoh's treasures. The reverse of the coin depicts the falcon god HORUS or RA HARAKHTY.
All coins are die-struck and minted. They are available in limited edition in one ounce 22K fine Gold or in .999 fine silver with 24K gold electroplate. Each is numbered and accompanied by a certificate of authenticity in a velvet lined gift box. This exquisite collection is also available in 14K Solid Gold.
Prompt return on mail orders. Send check or credit card # and exp. date. Please add $2.50 for postage and handling.
A. .999 Fine Silver Coin only and 24K EP (1¼" in.)
B. Coin "A" mounted in 14K Solid Gold Pendant
C. 14K Solid Gold Coin only (1¼" in.)
D. Coin "C" mounted in 14K Solid Gold Pendant
E. One ounce 22K Fine Gold Coin only (1¼" in.)
Check Mstr. Ch. BK. Amer. Amer. Exp.
$ TOTAL ORDER
ANCIENT ARTIFACTS, INC.
2100 READING ROAD, CINCINNATI, OH 45202 • 1-513-721-3360
Presented by Ancient Artifacts, Inc. in cooperation with Dorat Minting & Mfg. Company, artisans of precious metal jewelry since 1888.
All items have design Copyrights with all rights reserved.

IT STRIKES ANOTHER HOME EVERY MINUTE!

Protect valuables and records conveniently at home with a Sentry fire safe. Underwriters Laboratories tested up to 1700° F. for one hour. Money-back guarantee. Completely tax-deductible. Prices starting as low as $49.95 postpaid.

Send for **FREE** Sentry Catalog

sentry

123 Sentry Bldg., Rochester, NY 14625

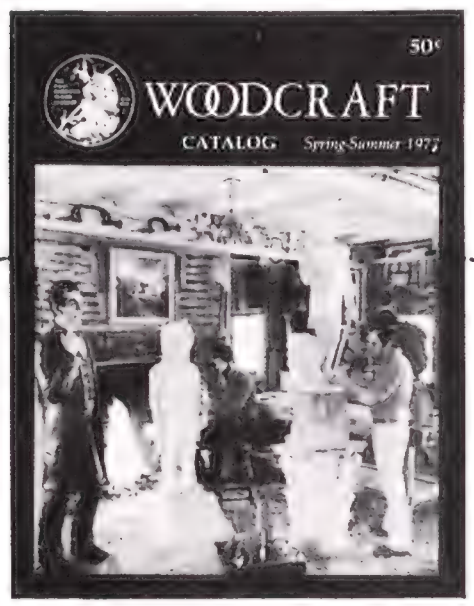
☐ Rush My FREE Sentry Catalog to:

Name _____

Address _____

_____ ZIP _____






2500 TOOL CATALOG

This New 104 page, 4 color catalog contains a complete line of woodworking hand tools and accessories chosen from the manufacturers of the highest quality tools in Europe and America. The fine collection includes tools for Woodcarving, Cabinetmaking, Veneering, plus special tools for Miniature Work, Musical Instruments and Boat Building and a selection of Design Books, How-to Books and Measured Drawings. Every tool is fully described and where necessary its use explained.

Catalog 50¢ in Coin or Stamps

WOODCRAFT

Dept. S107 313 Montvale Ave.
WOBURN, MASS. 01801


There is also a remarkable, rollicking chapter on black humor from the Civil War to the present. It includes samples from luminaries such as Bert Williams and Dick Gregory. It explains, with examples, the nearly universal insult ritual known as "the dozens." A contemporary, less pungent example of these is Muhammed Ali's familiar tactic of insulting his opponent before a fight: "Yes, the crowd did not dream when they laid down their money/that they would see a total eclipse of the Sonny [Liston]."

Jokes serve to put situations in perspective and assert superiority. Ethnic jokes, particularly at the expense of Irish immigrants, have long been popular with blacks. Typical is the 19th-century joke about the visitor to hell who sees Germans, English, Japanese and blacks roasting in torment, but no Irish. Asked why, the Devil takes the visitor to a room filled with Irish. "We're just drying them here," says the Devil, "they're too green to burn now."

The book has many insights:

• Because blacks had experienced tropical life, whites in the South depended on them more than we realize. Blacks knew how to cultivate rice, indigo, cotton, gourds and palmetto, fashion canoes and deal with fearsome alligators, among other things.

• Black medicine was widely used during slave times by whites as well as blacks. In 1750 the South Carolina legislature ordered published the cures of a slave known as Caesar and set him free because his antidotes were thought to be so effective.

• A vital function of fables and trickster tales was to educate and advise people deprived of both education and religious instruction. "Slave tales taught tactics for short-run survival and maintenance but held few illusions concerning the costs," Levine tells us.

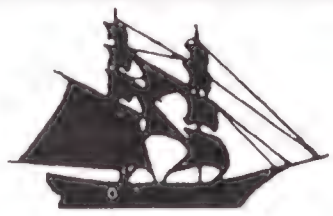
The liveliest discussion in the book deals with black music. The prescient Antonín Dvorák said "the future music of America must be founded on what are called 'Negro melodies.'" In Africa blacks lived in a world of sound—spoken, chanted, sung or shouted communication. Levine leads us through the development of spirituals, their decline, the rise of secular music. He describes the impact of the uninhibited "Holiness" churches, which amalgamated traditional spirituals and gospel songs with ragtime,

Glass sculpture in the form of a paperweight. "American Beauty Rose" by Baccarat. $425. ppd.

L.H. SELMAN LTD.
paperweight specialists
761 Chestnut, Suite 14B,
Santa Cruz, CA 95060

Send for our 48 page full color "Catalogue & Price Guide of Collectors' Paperweights" $3.





SHIP MODEL CATALOG

80 pages of Ship and Gun Kits. 190 pictures. Fittings, Plans, Books, Tools, Engines. 1976-1977 Edition.

$1.00 postpaid
(refundable with first order)

James BLISS & CO., INC. Model Dept. SI Route 128 Dedham, Mass. 02026

FINGER PETS

The tiniest of friends on the slimmest of bands. (Turtle, Frog, Ladybug, Snail, Flower A or B)

STERLING $12 — 14K GOLD $35

Add 50¢ for postage — Arizona res. 5% sales tax
by Mia, P.O. Box 4916, Scottsdale, AZ 85258



CRUISE DOWN THE MISSISSIPPI!

A luxury cruise on the lavish steamboat **"Mississippi Queen" plus** New Orleans, the gardens and plantations of the Old South, and more. Fully escorted; year-round departures. See your travel agent or write: Four Winds Travel, Inc. Dept. Q119, 175 5th Ave., N.Y.C. 10010. 212-777-0260.

Ozark Mountain Collection
A catalogue of limited editions and originals from forty selected artists. Superbly illustrated with color photographs. One dollar.
Ozark Mountain Collection
7S Downing Street — Hollister, Missouri 65672

blues and jazz, and made use of whatever instruments were handy. Mahalia Jackson, one of the outstanding products of such a background, explained its appeal: "How can you sing prayerfully of heaven and earth and all God's wonders without using your hands? . . . The Lord doesn't like us to act dead. If you feel it, tap your feet a little—dance to the glory of the Lord."

Levine's prodigious scholarship is a tremendous service, giving us one of the most complete and convenient assemblages of black culture materials currently available. He is unflinching in reporting the original epithets and dialect distortions of earlier times, as well as vulgarisms and sexual references, explicitly and without evasion.

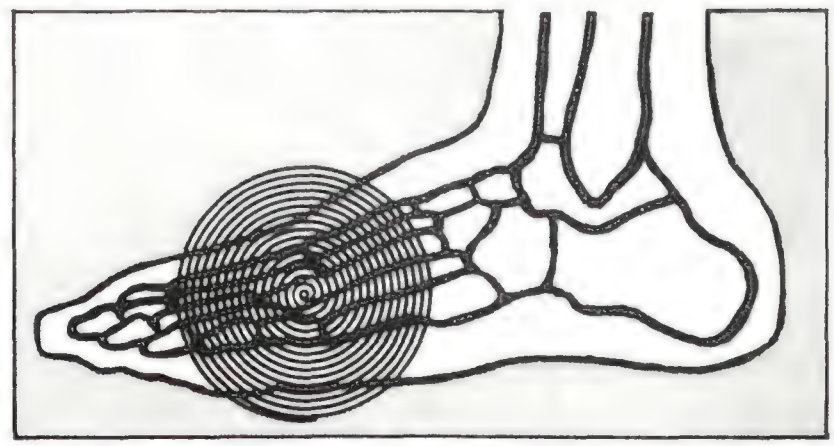
Occasionally the author steps in the way of his subject matter. For example, he says "Jazz won the allegiance of members of those segments of the society . . . who felt themselves marginal to the central framework and alienated from many of its conventional values." One might have said with equal precision that people simply enjoyed the hell out of it. Or, as musician Eddie Condon put it, ". . . the music poured into us like daylight running down a dark hole."

"Everybody wants to tell us what a Negro is," the distinguished American writer Ralph Ellison has said. "But if you would tell me who I am, at least take the trouble to discover what I have been." *Black Culture and Black Consciousness* is an excellent place to start.
*—Lester Brooks*
Author, *Great Civilizations of Ancient Africa;* coauthor, *Blacks in the City, History of the National Urban League*

*Fired by Manley Zeal*
Philip Chadwick Foster Smith
(Peabody Museum of Salem [Massachusetts], $10)

"History is the essence of innumerable biographies," Thomas Carlyle wrote. And *Fired by Manley Zeal* offers one more grain of evidence to support his wisdom. On one level the book is a carefully documented account of a little-known and puzzling incident during the American Revolution—when a frigate of the Continental Navy turned tail before an inferior British force while a second was captured. On another level the book provides some insight into the


# My Feet Were Killing Me...Until I Discovered the Miracle of Hamburg!



It was the European trip I had always dreamed about. I had the time and money to go where I wanted—see what I wanted. But I soon learned that money and time don't mean much when your feet hurt too much to walk. After a few days of sightseeing my feet were killing me.

Oh, I tried to keep going. In Paris I limped through Notre Dame and along the Champs-Elysées. And I went up in the Eiffel Tower although I can't honestly say I remember the view. My feet were so tired and sore my whole body ached. While everybody else was having a great time, I was in my hotel room. I didn't even feel like sitting in a sidewalk cafe.

The whole trip was like that until I got to Hamburg, Germany. There, by accident, I happened to hear about an *exciting breakthrough for anyone who suffers from sore, aching feet and legs.*

This wonderful invention was a custom-made foot support called Flexible Featherspring. When I got a pair and slipped them into my shoes *my pain disappeared almost instantly.* The flexible shock absorbing support they gave my feet was like cradling them on a cushion of air. I could walk, stand, even run. The relief was truly a miracle.

And just one pair was all I needed. I learned that women also can wear them —even with sandals and open backed shoes. They're completely invisible.

Imagine how dumbfounded I was to discover that these miraculous devices were sold only in Europe. Right then I determined that I would share the miracle I discovered in Hamburg with my own countrymen.

Today thousands of Americans of all ages—many with foot problems *far more severe* than mine—have experienced this blessed relief for themselves.

Here's why Featherspring work for them and *why they can work for you.* These supports are like nothing you've ever seen before. They are custom fitted and made for *your feet alone!* Unlike conventional devices, they actually imitate the youthful elastic support that Nature originally intended your feet to have.

Whatever your problem—corns, calluses, pain in the balls of your feet, burning nerve ends, painful ankles, old injuries, backaches or just generally sore, aching feet. Flexible Featherspring will bring you guaranteed relief with every step you take.

**Don't suffer pain and discomfort needlessly. If your feet hurt, the miracle of Hamburg can help you. Write for more detailed information. There is no obligation whatsoever. Just fill out the coupon below and mail it today.**

© Featherspring International Corp. 1977
514 N.E. 124th. Seattle, Washington 98125

**FEATHERSPRING INTERNATIONAL CORPORATION**
**514 N. E. 124th, Dept. SM107**
**Seattle, Washington 98125**

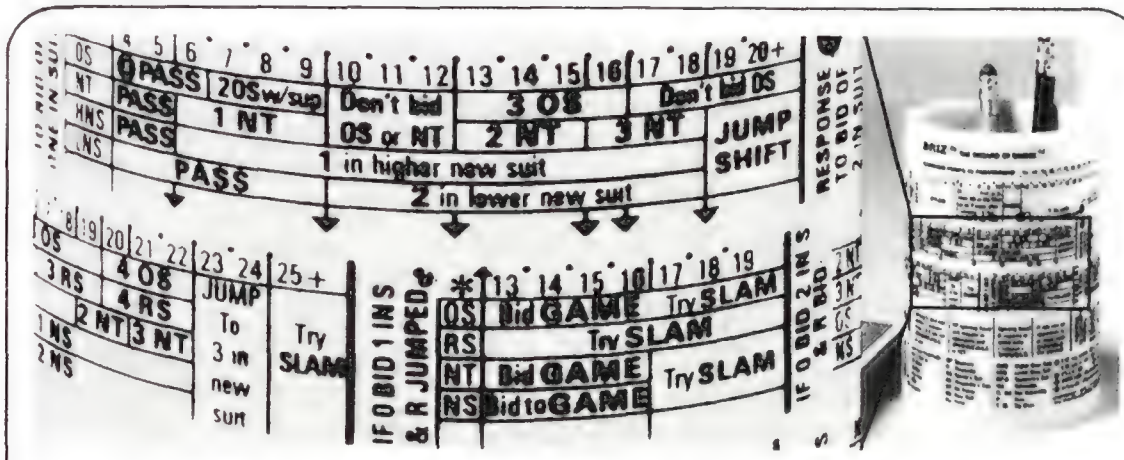
YES! I want to learn more about the guaranteed relief Flexible Featherspring Foot Supports can give. Please send me your free brochure. I understand that there is no obligation and that no salesman will call.

Print Name _____

Address _____

City _____

State _____ Zip _____




## Never Again Be Embarrassed By A Bad Bridge Bid

Over 98% of your bridge bids are *right* using BRIZ,[T.M.] the Wizard of Bridge.

Just count your points, twirl the sliding rings until they match the bidding situation, and read your correct bid directly. It reminds you of all you've learned about bidding; doubles as 4" high pencil caddy, too. Satisfaction or money back.

**BRIZ, The Wizard of Bridge Caddy $6.95**
4 for $25.00. Add $1 for ship., ins. & hand. 4½% sales tax if Ohio resident.

BETTER IDEAS 2226 Arbor, 108B, Dayton, Ohio 45439

# Now You Can Collect Rare U.S. Stamps

You are invited to enjoy building a rare U.S. stamp collection. Become a subscriber in the Rare U.S. Stamp Investments Club.

Rare U.S. stamp investments are liquid. The ever-increasing demand for quality United States stamps has created a seller's market.

During the last 10 to 20 years, rare U.S. stamp values have been spiraling up at rates which may be unbelievable to conventional stock market investors. During the past two years alone, U.S. stamp values have achieved an average annual compounded growth rate of 15.5%! — far outpacing the overall performance of mutual funds, the Dow Jones Industrial Average and the average annual increase in consumer prices.

These impressive increases in value are the result of a rapidly increasing demand by professional stamp collectors and investors for the absolutely fixed supply of existing rare U. S. stamps. The supply of U. S. stamps produced in the 19th and early 20th centuries can never be increased. As today's 27 million stamp collectors become more affluent and as thousands of new collectors join their ranks each year, competition for the higher quality stamps of the past will only serve to drive their prices even higher.

Rare U.S. stamp investments are completely private. A large investment in rare stamps can be stored safely in a small place — like an album or safe deposit box. No one ever needs to know you are investing in stamps or how much your investment is worth. Our members' names are held strictly confidential.

Now, our professional new service makes investing in rare U.S. stamps simple. You can participate with confidence in the rapidly rising values of rare U.S. stamps. For as little as $25 per month, FNI will help you build a rare stamp investment portfolio on a regular monthly basis. As a subscriber to Rare U.S. Stamp Investments, you are given the opportunity to capitalize on the experience and know-how of our stamp experts.

Build a complete collection of America's greatest stamps chosen by distinguished advisors. Join this unique Club today!

To learn more about this exciting new opportunity, write today to:

F.N.I., Inc. — Box 326
Northfield, Ohio 44067

F.N.I., Inc. SMG
Box 326, Northfield, OH 44067
Please send complete information on Rare U. S. Stamp Investments plan.

NAME _____

STREET _____

CITY _____

STATE _____ ZIP _____


"why" of that incident—a clash between two monumental egos, that of Commodore John Manley and of Captain Hector McNeill.

Manley, whose feats in capturing British ships had made him a hero and the subject of a song, was introspective and reticent. McNeill, who had none of Manley's early success, was as outspoken as he was opinionated. In short, the two were equally vain. As a result, each heartily disliked the other, an intense feeling that was to have disastrous consequences.

In late May 1777, the two men sailed from Boston on patrol. Manley, in charge of the squadron, commanded the 32-gun frigate *Hancock*. McNeill was aboard the frigate *Boston*, fitted with 30 guns. July 6 the two frigates (now accompanied by a third, the captured *Fox*) came upon the British 44-gun frigate *Rainbow* and the 10-gun *Victor* off Newfoundland. Although he clearly outclassed the British, for some reason Manley did not attack. (He may have mistaken one for another ship.) The next morning, July 7, *Rainbow* and *Victor* were joined by *Flora*, another frigate.

John Brisbane, R.N., captain of the *Flora*; he commissioned paintings.

Then the fight began. *Fox* was first to fall. Then McNeill took flight, eventually hiding out on the Maine coast for more than a month. A furious Manley, severely out-gunned, finally struck his colors. An ensuing court-martial acquitted Manley and cashiered McNeill from the navy, despite the latter's spirited attack on Manley's abilities.


MAGAZINE TABLE

HOLDS OVER 100 MAGAZINES

COMPLETE OR IN KIT

Over 100! That's the number of big magazines, small magazines, newspapers & journals that our ingenious pine table stashes away! Beside chair, beside couch, it holds all your reading neatly, accessibly & instantly findable. 23"H 18"W 21"D. In our Antique Satin $29.95 (plus $3 post). In 1-Hour Kit (you assemble & finish): $19.95 (plus $3 post).

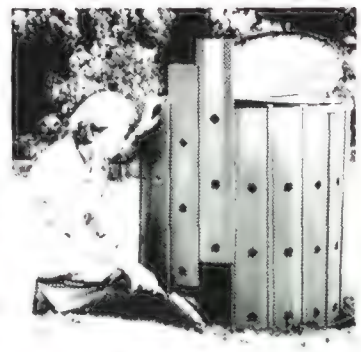
**Send for your FREE Yield House Catalog!**

Yield House
Quality Pine Furniture For Over 30 Years
Dept. S70A Box 1000, North Conway, N.H. 03860

*Fast, Efficient, Reliable*

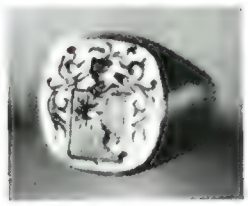
# COMPOST BINS

Turn garden and kitchen wastes into rich, fertile compost to improve poor soil and feed your plants. Grow bountiful harvests of vegetables and more beautiful flowers. Scientifically designed bins produce valuable compost in weeks. No turning the heap. Make a ton in one season. Send for FREE catalog:



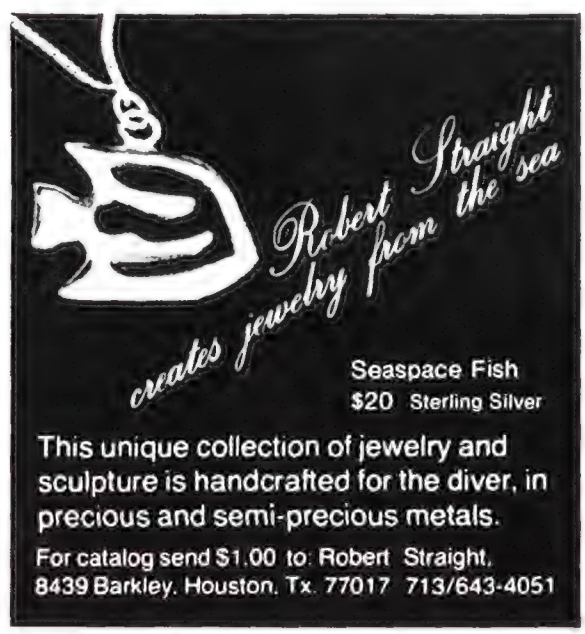
ROTOCROP
47 Buttonwood Street
New Hope, PA. 18938

# FAMILY CREST RINGS



Solid 14K Gold, $195. Sterling Silver, $90. **WE WORK IN THREE BASIC WAYS**—If you have a crest, send a copy of it, otherwise you may check it against our list, or you may design your own (see below). **SEND FOR OUR FREE COLOR CATALOGUE.** If, in addition to free catalogue, you want our booklet with over 20,000 names for which we have crests available plus instructions on how to design your own crest, send us $1.00.

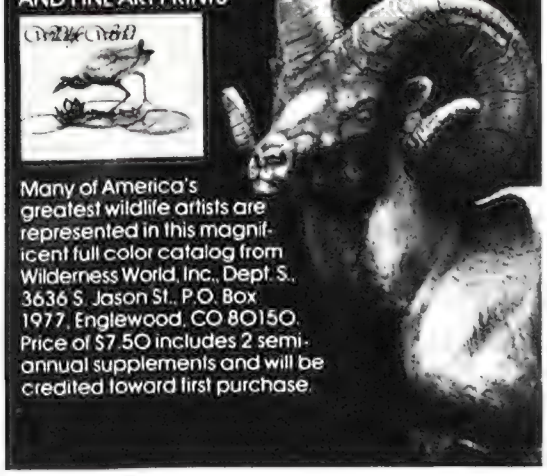
HERALDICA IMPORTS, INC. D•SM
21 WEST 46th ST. • NEW YORK, N.Y. 10036




This unique collection of jewelry and sculpture is handcrafted for the diver, in precious and semi-precious metals.

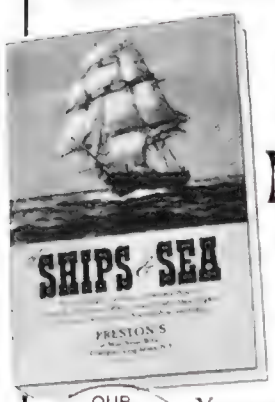
For catalog send $1.00 to: Robert Straight, 8439 Barkley, Houston, Tx. 77017 713/643-4051

NEW CATALOG OF
WILDLIFE BRONZES
AND FINE ART PRINTS



Many of America's greatest wildlife artists are represented in this magnificent full color catalog from Wilderness World, Inc., Dept. S., 3636 S. Jason St., P.O. Box 1977, Englewood, CO 80150. Price of $7.50 includes 2 semi-annual supplements and will be credited toward first purchase.

Send 25¢ for Preston's new 128 page



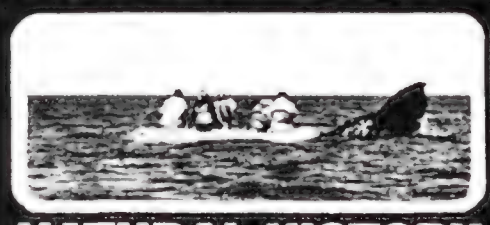

Catalog of
SHIP
MODELS
& Decorative
Nautical Ideas
for the Home

OUR 96th YEAR

You could shop for months and never find the hundreds of decorative nautical ideas illustrated in Preston's new catalog: 128 pages teeming with ship models, marine paintings, nautical lamps and clocks, ships' wheels, figureheads and scores of other nautical ideas for the home.

Send 25¢ for Catalog to: PRESTON'S
67-K Main St. Wharf, Greenport, N. Y. 11944

WHALES!



NATURAL HISTORY EXPEDITIONS

Take a voyage of discovery into the realm of the Gray Whale at Laguna San Ignacio. Explore the flora and fauna of Baja California's off-shore islands. Join with a staff of scientists and naturalists and discover the last North American frontier. Seven day expeditions. Open Party and Charters available December through May. For more information and reservations call or write: Dept. SM
(714) 222-1144
(213) 626-8005

H&M Landing
2803 Emerson, San Diego, Ca 92106

Ironically, the incident might never have survived the intervening two centuries had it not been for the captain of *Flora*. In 1779 John Brisbane commissioned a series of four paintings depicting the action. Virtually unknown for 185 years, the paintings were acquired by the Peabody Museum in 1976. Those paintings prompted Smith to write his book.

And an admirable book it is. It is a rare (for these days) example of understated elegance—in its design and illustrations, in the unassuming yet convincing scholarship of its author, and in the quality of its printing. And above all, it is of course a testimony to the truism that people, not events, are history.

*—John F. Warner*
Free-lance writer and editor

*How the Other Half Dies:*
*The Real Reasons for World Hunger*
Susan George
(Allanheld, Osmun & Co., Distributed by Universe Books, paperback, $4.95)

The world food problem has two major dimensions. The first is distribution. Enough food is produced in the world at large for each of the world's four billion inhabitants to have enough to eat. Yet an estimated four to five hundred million people are chronically underfed. The second dimension relates to food production in the future. The world may not be able to continue producing at a rate that will provide enough food to improve or maintain present levels of consumption. The neo-Malthusian nightmare of population outstripping food is most pertinent in resource-poor, and/or densely populated tropical countries where present levels of production are barely keeping pace with increasing population.

Susan George has chosen to write about the first aspect of the problem of hunger. In her view the food problem is best analyzed in terms of political power and income distribution between and within countries. Poor countries and poor people cannot afford to buy the food they need. For her, the solution to the food problem, therefore, is to eradicate inequality and poverty. However, the eradication of poverty will only come about when the international economic order is restructured and when sweeping changes take place within national economies. While Mrs. George only gives us a glimpse of the

A Hawaiian holiday just the way you want it.

Variety: that's Hawaii One-O vacations. A freewheeling week in Waikiki is just the first choice in this guide to Hawaii. It starts with your private taxi from the airport, and includes a Passport to Polynesia with free admission to four unique attractions from Hawaii's past. Follow that with a variety of delightful dining and entertainment offerings.
Hawaii One-O offers a host of optional excursions around the neighboring islands, too. Hawaii One-O prices range from $99.00 to $229.00* (complete) per person, two to a room. Seven days/six nights (ITUAG-HHIA 6).
Other island vacations are Hawaii Two-O, Hawaii Three-O, and Hawaii Four-O. Or experience Hawaii Drive-O . . . fabulous fly/drive vacation with a choice of hotel and condominium accommodations.
In the friendly skies, it's Royal Hawaiian Service for you, with exotic drinks, Polynesian foods . . . all the atmosphere of the Islands.
See the Hawaii of your choice; send the coupon in to United for your free Hawaii One-O brochure. Or contact your Travel Agent.
United. Flying more people on more 747's to Hawaii than any other airline.

*Air fare not included. Prices subject to change.

United Airlines, P.O. Box 700
Wilmette, Ill. 60091

Please send me your free "Hawaii One-O" brochure.

NAME_____
ADDRESS_____
CITY_____
STATE_____ ZIP_____
1061-1000

UNITED AIRLINES

# Free Books of Christmas Gifts

- the one-and-only FRUIT-OF-THE-MONTH CLUB®
- our world-famous Royal Riviera® PEARS
- our fantastic Cheesecake
- Wild 'n Rare® *prize-winning* fruit preserves
- cheeses, smoked meats and poultry
- gorgeously got-up Gift Baskets
- LOTS MORE!

For your FREE Christmas Gift Books, write us today —

*Harry and David*®
Box 525-K Medford, Oregon 97501

Please send me FREE, your new Christmas Gift Books

Name_____

Street _____

City_____ State_____ Zip _____

*Harry and David*
Box 525-K, Medford, Oregon 97501



## HISTORICAL T-SHIRTS

Jung, Freud, Nietzsche, Wittgenstein, Plato, Bertrand Russell, Virginia Woolf, Emily Dickinson, George Sand, Amelia Earhart, James Joyce, Mark Twain, Bach, Beethoven, Mahler, Mozart, Colette, Gertrude Stein, G.B Shaw, Marx, Mao, Nijinsky, Dostoevsky, Poe.

White cotton shirts, sm(34-36), med(38-40) lg(42-44) x-lg(46-48) $6.00ea 4/$20
prices postpaid - make checks payable to
**HISTORICAL T-SHIRTS**
Box 551 Somerville, Mass. 02144



From the SMITHSONIAN

## A Sweeping View of our Environment

**for your own den or library**
**for your local library**
**for your children's room**
**for your school**
**or office or display**
**or foyer or meeting room**

A beautiful reprint of the centerfold that appeared in the March 1976 issue of SMITHSONIAN, offered now in one seamless, continuous sheet, printed on one side only, 5′-6″ x 11″.

**For only $1.25**
(Postpaid)

Send money to:
Smithsonian Magazine
900 Jefferson Drive, S.W.
Washington, D.C. 20560


utopia she has in mind—it seems to be something like Mainland China—she has a great deal to say about what's wrong with the existing system.

Mrs. George's focus on political power, income distribution, poverty and hunger leads her to conclude that population pressure, technology, weather and the general level of development have almost nothing to do with hunger. Rather, in her view, it is a combination of elites within a country (intent on preserving their position), aided by multinational agribusiness corporations (intent on getting the most out of short-term profits), and helped by the World Bank (intent on preserving capitalistic hegemony) who wittingly conspire to maintain the status quo and hunger. This is done by forcing the poor off the land in the name of technical progress, compelling those remaining to grow cash crops for export rather than food crops for consumption and by pushing tractors and pesticides on Third World farmers.

She recommends that poor countries reduce their dependence on the richer nations and market forces that prevent them from resolving their own food problems. This means decreasing exports from poorer to richer nations, importing less and stressing greater economic self-sufficiency. Poorer countries should grow more food rather than export crops. The expectation is that the welfare of small farmers would be improved by consuming their own output.

Such a move to greater autarchy is also recommended by a growing number of radical economists. However, they tend to forget that many countries that have a very low level of external trade relative to national output are among the world's poorest. Furthermore, it is certain that in many cases national income would decline if land was taken out of cash crops and put into food. Cuba revised its anti-sugar policy over a decade ago in recognition of this fact. The same economics also apply to other familiar crops: the typical coffee grower would obtain only a portion of the equivalent income from land planted to food crops instead of coffee.

It is correct to inquire, as Mrs. George does, if the poor farmer or laborer gets his fair share of coffee revenue—but it is not helpful to advise a government, or a smallholder, to reduce real income to a fraction of the previous level. It may be old-fashioned but the doctrine of com-


## NATURE EXPEDITIONS and Journeys of Discovery

*Winter and Spring 1978*

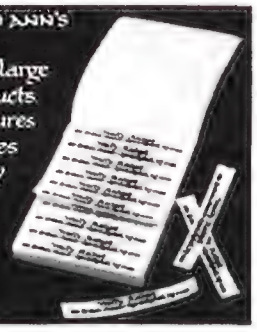
Pacific Islands and Lagoons of Baja California
East Africa • New Zealand
Galapagos Islands
Mexico • Nepal
Yucatan and Guatemala
Sea of Cortez • Hawaiian Islands

Vacations with education for the non-specialist in anthropology, natural history and nature photography to unique environments of the world

*For information write to*
Nature Expeditions International • Dept. SS
599 College Avenue • Palo Alto, CA 94306 • (415) 941-2910



**PERSONALIZED FOR YOU** with ANN'S
*Calligraphy*
in your choice of five styles on large selection of stationery art products. Send for sample sheet with pictures or— send $1.00 for kit of samples demonstrating superior quality of paper, colors, designs plus $1.00 credit on order.
*uncommon press*
STUDIO-M
7691 LIBERTY ROAD SOUTH
SALEM, OREGON 97302





## MURPHY'S LAWS!

Incomparable "scientific" wit. Colorfully lithographed on 8" x 10" heavy Parchtext for framing. A great business or personal gift! Only $3 (4/$10). Four Corners Press, Dept. STA, Hanover, Mass. 02339.



Again available: OLD FASHIONED, NATURALLY RAISED ON OWN MOTHER'S MILK BABY BEEF & **VEAL**

No hormones, antibiotics, pesticides, herbicides used, ever. Deliciously tender with less fat, 100% pure organic.

SPECIAL 28 LB. TASTER-SAMPLER PACKAGE WITH YOUR FAVORITE CUTS: STEAKS, ROASTS, SCALLOPINI, CUTLETS, 4 OZ. PATTIES. Please (804) 984-7746 or write

**TEEL MOUNTAIN FARM**
BOX 4 STANARDSVILLE, VIRGINIA 22973

HOME DELIVERIES START NOW—RESERVE NOW. SUPPLY LIMITED

**$1 INTRODUCTORY OFFER**
Set of four 8½x11" adorable panda prints in 4 different designs, work of a famous Chinese (Peking) artist, for only $1; four 11x14"'s for only $2, plus 85¢ handling.
PEKING GALLERY,
5022 Hidden Branches Dr.
Atlanta, Ga. 30338



Horse & Hound — Designed & Crafted by

(401) 397-9660
Rural Route 1 Greene, R.I. 02827

Rings: frog, horse, unicorn, cat, hound pig, lion, ea: $40 Sterling, $250 14K Gold. Please specify ring size with your check or money order. Brochure.

parative advantage still has its merits.

Susan George writes well and she does well to remind us of the link between politics, poverty and food. Unfortunately, she is so intent on confirming an international conspiracy to deny progress in developing countries that she strays too far and introduces extraneous, sometimes faintly ridiculous, notions. An example is the grossly exaggerated role she ascribes to the Ford and Rockefeller Foundations in shaping policies in India and Indonesia. A discerning reader also must feel a bit uncomfortable about the selective sources of information—an anonymous banker, the unpublished manuscript of one fieldworker, a study by a Norwegian sociologist (subsequently refuted by FAO). The general bias of the book makes it understandable, but not necessarily forgivable, and it fails to recognize one of the economic wonders of our age—the amazing productivity of U.S. agriculture. The nearly four percent of the U.S. population now engaged in agricultural production has become the world's bulwark against famine. Capitalistic U.S. agriculture is now the major food supplier to the world and, unlike the oil–supplying nations, has permitted prices of internationally traded grains to drop sharply.

The very substantial problems of increasing production and improving food distribution in poor countries can be solved by measures that range from improving techniques of production to expanding world trade. Most experts now agree with Susan George, as indicated in her chapter on the World Bank, that more emphasis must be placed on direct efforts to improve levels of output and incomes in the rural areas of poor countries. However, it will be the governments of these countries, rather than U.S. policy, the multinational corporations or the World Bank, which will establish priorities, organize, administer and execute these programs. Perhaps a wider perspective than Mrs. George's would also recognize that solutions to increasing output and equity can be attained by working within existing institutional frameworks, as in Taiwan and Kerala in India, as well as by transforming them, as in China and Cuba.

*—Montague Yudelman*

Director, Agriculture and Rural Development, the World Bank; author, *Africans on the Land* and *Agricultural Development and Economic Integration in Latin America.*


# COLD ALL WINTER LONG?

It's 10°outside . . . Even getting colder. So you bundle up in layers and layers of heavy clothes. First with long underwear . . . then bulky, restrictive thermalwear on top.

Oh, you were warm all right. Like in a Turkish bath. Because you began to perspire from all your activity. And perspiring in that mountain of clothes is like perspiring in a plastic bag! The perspiration is locked in. So there you are. Wet and miserable.

But now, at last, Damart has solved the problem. Because Damart invented underwear that keeps you *warm, dry and comfortable* no matter how cold it is or how long you stay out. Underwear that's soft and light so you can move easily. Underwear that *lets the perspiration evaporate through* so you always stay warm and dry next to your skin.

Damart does this with a new miracle fabric—Thermolactyl. It not only retains and reflects your natural body warmth, it's knitted to let *perspiration out!* No other underwear does this! Damart Thermolactyl is so comfortable that the Mount Everest climbing expedition wears it. So does the Glencoe mountain rescue team and the entire Chicago Bears Football Club.

Our free color catalog tells the full Damart Thermolactyl story and displays the whole Damart line for men and women. Send for your FREE copy now!

A LIMITED WARRANTY TO CONSUMERS
Good Housekeeping PROMISES
REPLACEMENT OR REFUND IF DEFECTIVE

**THE PROOF IS IN THE WEARING!**

**Damart** Thermawear, Inc.

WHEN IN THE BOSTON AREA, VISIT OUR
PORTSMOUTH, N.H. STORE. (603) 431-4700

**THERE IS NO WARMER UNDERWEAR MADE!**
Fill out and send to:
**DAMART, INC. Dept. SM107**
**1811 Woodbury Ave.**
**Portsmouth, N.H. 03801**
**YES!** Rush me your **FREE DAMART** Catalog . . . I want to enjoy the fantastic warmth of Thermolactyl Underwear, a DAMART® exclusive. (I understand there is no obligation.)

PRINT NAME

ADDRESS

CITY STATE ZIP © 1977, Damart, Inc.

Sheepskin House

**the Range coat**

A rugged do anything coat with a beautiful touch of high fashion. Handcrafted of supple, durable sheepskin with soft fleece throughout. Roll back cuffs with soft generous collar; all seams and pockets double stitched for maximum strength. Perfect for that high fashion look and seasons of winter warmth.

SEE OUR NEW COLLECTION OF MEN'S AND WOMEN'S SHEEPSKIN COATS AND JACKETS...AT DIRECT-FROM-FACTORY-TO-YOU PRICES STARTING AT $120 SEND FOR OUR CATALOG NOW!

SHEEPSKIN HOUSE DEPT. S-10
5241 SOUTH 300 WEST
SALT LAKE CITY, UT 84107
Please send me your catalog of genuine sheepskin coats. I have enclosed 50¢ for postage and handling

name
address
city state zip

© 1977 Sheepskin House

**Carry TEN TIMES a Wheelbarrow Load with INCREDIBLE EASE!**

These BIG, strong carts are **perfectly** balanced on two huge wheels — roll easily over lawns and gardens — carry up to 400 lbs. of load — huge volume capacity means you make fewer trips — you'll save time **and** steps.

If you are **still** struggling with a wheelbarrow or inadequate cart (with tiny wheels) send for FREE Cart Catalog. Build-it-yourself kits, too.

GARDEN WAY RESEARCH, Dept. 70470
Charlotte,
Vermont
05445

# *Additional reading*

**Solar cells** (p. 38)

"Photovoltaics: The Semiconductor Revolution Comes to Solar," *Science,* July 29, 1977

*Application of Solar Technology to Today's Energy Needs,* Office of Technology Assessment, Washington, D.C., June 1977

*Solar Photovoltaic Energy,* Hearings before the Subcommittee on Energy of the Committee on Science and Astronautics, U.S. House of Representatives, Ninety-third Congress, Second Session, June 6 and 11, 1974, U.S. Government Printing Office, Washington, D.C., 1974

**Rubens** (p. 46)

*Rubens* by Max Rooses, J. B. Lippincott Company (Philadelphia), 1904

*Recollections of Rubens* by Jacob Burckhardt, Phaidon Publishers Inc., distributed by The Oxford University Press, 1950

*Rubens and His World* by Christopher White, Thames and Hudson (London), 1968

*The Letters of Peter Paul Rubens,* edited by Ruth S. Magurn, Harvard University Press, 1955

*Rubens: The Antwerp Altarpieces,* edited by John Rupert Martin, W. W. Norton & Company Inc., 1969

*Rubens in America* by Jan-Albert Goris and Julius S. Held, Pantheon Books, Inc., 1947

**Texas helicopter roundup** (p. 58)

*The Handbook of Texas* by Walter Prescott Webb, The Texas State Historical Association, 1952

*Western Words: A Dictionary of the Range, Cow Camp and Trail* by Ramon Adams, University of Oklahoma Press, 1955

*The American Cowboy: The Myth and the Reality* by Joe B. Frantz and Julian E. Choate jr., University of Oklahoma Press, 1955

**Book of Kells** (p. 66)

*The Celts* by Duncan Norton-Taylor, Time-Life Books, 1974

*Irish Art in the Early Christian Period, to 800 A.D.* by Françoise Henry, Cornell University Press, 1965

*The Book of Kells* with study by Françoise Henry, Alfred A. Knopf, Inc., 1974

*A Concise History of Irish Art* by Bruce Arnold, Praeger Publishers, Inc., 1968

**Mathematical geniuses** (p. 76)

*The Gifted and the Creative: A 50-Year Perspective,* edited by Julian C. Stanley, William C. George and Cecilia H. Solano, The Johns Hopkins University Press, 1977

*Intellectual Talent: Research and Development,* edited by Daniel P. Keating, The Johns Hopkins University Press, 1976

*Mathematical Talent: Discovery, Description, and Development,* edited by Julian C. Stanley, Daniel P. Keating and Lynn H. Fox, The Johns Hopkins University Press, 1974

"William James Sidis, The Broken Twig" by Kathleen Montour, *American Psychologist,* April 1977

**Elihu Yale** (p. 91)

*Elihu Yale, The American Nabob of Queen Square* by Hiram Bingham, Dodd, Mead & Company, 1939

*The Yale Family, or the Descendants of David Yale* by Elihu Yale, Storer & Storer, 1850

**Biosphere** (p. 100)

*Biosphere: A Study of Life* by N. M. Jessop, Prentice-Hall, Inc., 1970

*Amazonia: Man and Culture in a Counterfeit Paradise* by Betty J. Meggers, Aldine-Atherton, Inc. (Chicago), 1971

*Amazon Jungle: Green Hell to Red Desert?* by R. J. A. Goodland and H. S. Irwin, Elsevier Scientific Publishing Company (Amsterdam), 1975

*Amazon Journey: From the Source to*

*the Sea* by John Ridgway, Hodder and Stoughton (London), 1972
*The Last Great Journey on Earth* by Brian Branston, Weybright and Talley (New York), 1971

**Bartram** (p. 122)
*Memorials of John Bartram and Humphry Marshall* by William Darlington, Hafner Press (New York), 1967
*John and William Bartram, Botanists and Explorers* by Ernest Earnest, University of Pennsylvania Press, 1940
*William Bartram, Interpreter of the American Landscape* by N. Bryllion Fagin, The Johns Hopkins University Press, 1933
*John and William Bartram's America* by Helen G. Cruickshank, The Devin-Adair Company, Inc. (Greenwich, Connecticut), 1957

**Victoria Woodhull** (p. 131)
*Mrs. Satan, The Incredible Saga of Victoria C. Woodhull* by Johanna Johnston, G. P. Putnam's Sons, 1967
*The Terrible Siren* by Emanie Sachs, Arno Press (New York), 1972
*Free Woman, The Life and Times of Victoria Woodhull* by Marion Meade, Alfred A. Knopf, Inc., 1976

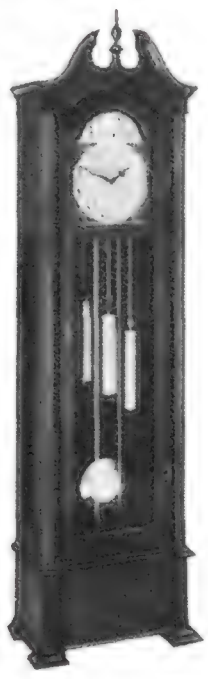
**Folklife Festival** (p. 142)
*Folklore and Folklife,* edited by Richard Dorson, University of Chicago Press, 1972
*Calendar of Festivals,* published by The National Council for Traditional Arts, Washington, D.C., 1976

Picture credits

Cover Loren McIntyre; 12 courtesy Pacific Power & Light Company; 31 Dane A. Penland; 38, 39 David Cupp; 40,41 Jan W. Faul; 42 Charles W. Phillips, NASA; 43,44 NASA; 45 Jan W. Faul; 46 The Museum of Fine Arts, Antwerp; 47-49 Dmitri Kessel; 50-51 The Museum of Fine Arts, Antwerp; 52-55 Dmitri Kessel; 58-65 A. Y. Owen; 66-71 The Green Studio Limited, Dublin; 72-75 Lee Boltin; 76-82 Yoichi R. Okamoto; 91 Yale Center for British Art; 92 Terence Spencer, The National Trust, London; 94 Terence Spencer; 95 (top) Victoria and Albert Museum-Crown Copyright; 95-97 John Bethell-The National Trust, London; 100-111 Loren McIntyre; 115-120 Robert C. Lautman; 122 American Philosophical Society; 123 National Portrait Gallery-Smithsonian Institution; 124 Elsam, Mann & Cooper Ltd., Liverpool-courtesy the Earl of Derby's Library at Knowsley Hall, Richard Howard; 125 National Portrait Gallery-London, Ted Streshinsky-courtesy The Sutro Library; 126 from *The Natural History of Carolina, Florida and the Bahama Islands* by Mark Catesby; 129 Paul Breeden; 131 *Harper's Weekly,* February 17, 1872; 132-141 The Bettmann Archive, Inc.; 142 Robert Yellin; 144 Ralph Rinzler; 146 Susan and Reed Erskine; 148 Smithsonian Institution; 150-151 Roland L. Freeman; 172 James Flora

If you can use a screwdriver and drill...you can

**BUILD YOUR OWN HEIRLOOM GRANDFATHER CLOCK**



at 50% or less of retail price

- Solid ¾" kiln dried wood
- Fully Assembled/ precision-made West German Movements

**WRITE NOW FOR FREE Color Brochure of complete line of Grandmother, Grandfather and other clocks.**

**HENTSCHEL clock company**

Department 7-ST0
16 Atlantic Avenue
So. Dennis,
Mass. 02660

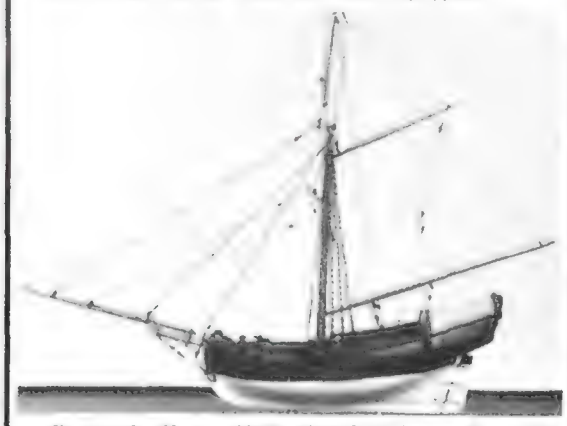
GALWAY CRYSTAL

Traditional Irish Handknits.
For free Brochure write to

Ellis & Co.,
Export Dept.,
Main Street,
Longford,
IRELAND

**Authentic Shipmodels Amsterdam**

Our limited edition authentic scale models of wooden ships of historic fame are prized by museums and collectors around the world. Each is meticulously built by hand by Old World craftsmen supervised by marine historians and museum authorities.



*Bermuda Sloop. 1740. Hand-built planks on frame. Scale 1:48. Length 23". Height 18". Price $604 f.o.b. Stamford, CT.*

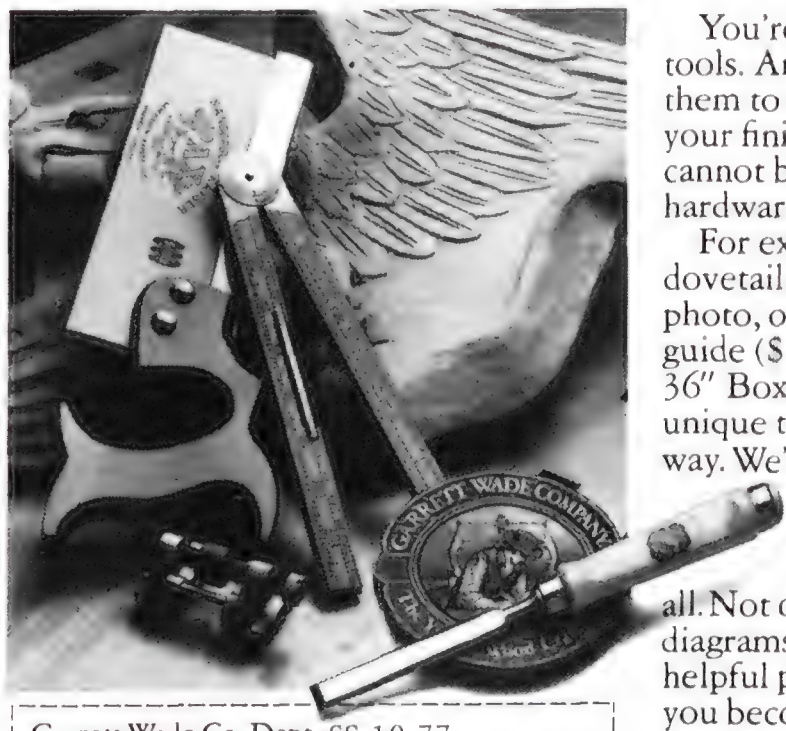
Fully constructed with typical Dutch devotion to detail, each limited edition scale model is an enduring art treasure at prices from $260 to $11,300. Half models available.

Send $5 for our beautiful full color portfolio(refundable on first purchase) to:

authentic shipmodels amsterdam
26 Palmer's Hill Rd. Stamford, CT. 06902
(203) 323-5559

Name: _____
Address: _____
_____ zip _____

**If you want to be as good as you can get, your tools should be as good as they can get.**




You're only as good as your tools. And we offer over 1,000 of them to help make you proud of your finished project. Tools which cannot be bought in your average hardware store.

For example, the brass-backed dovetail saw ($26.00) shown in the photo, or the accurate honing guide ($9.90) and the beautiful 36" Boxwood rule ($13.90)...all unique tools in their own special way. We've searched the world for our line of tools and our 108-page catalog shows and describes them all. Not only that, but you'll find diagrams, "how-to" sections and helpful pointers which will help you become a better woodworker.

If nothing else, $1 is a small price to pay for finding out that these exceptional tools are still available in this day and age.

*All prices postpaid.

Garrett-Wade Co. Dept. SS-10-77
302 Fifth Avenue, New York, N.Y. 10001

Gentlemen:

☐ Send me the tools listed on attached sheet, and a FREE catalog.
☐ Send me your 108 page catalog only. Enclosed is $1.00.
☐ Send me your catalog of INCA SWISS stationary power tools. Here's my $1.00 for that catalog as well.

Name_____
Address_____
City_____ State_____ Zip_____
Total amount enclosed: $_____
☐ Master Charge ☐ American Express ☐ Visa
Card #_____ Exp. date _____
*All prices postpaid.

Photograph by
Valerie Taylor

# THE GREAT WHITE SHARK!

## One of the killers you'll encounter in DANGEROUS SEA CREATURES

Razor-edged tooth of a great white

The great white . . . most feared of the ocean's predators. He grows to a length of 21 feet, and to a weight of three tons. His teeth measure a full two inches, and are replaced, when damaged, within 24 hours. His acute sense of smell can detect one ounce of fish blood in one million ounces of water. His nerve endings can pick up erratic vibrations — such as those of a swimmer in trouble — at a distance of 600 feet. The great white claimed the lives of thousands of shipwreck victims during World War II . . . yet most attacks take place in waist-deep water! You've heard the myths about the great white shark . . . now, read the stranger-than-fiction truth about the deadliest of all sharks in *Dangerous Sea Creatures*. It's your first volume in the WILD, WILD WORLD OF ANIMALS library, based on the popular TIME-LIFE television series.

The great white is only one of the terrifying inhabitants of the deep. In *Dangerous Sea Creatures,* yours for 10-day free trial, you'll discover:

- **an electric ray,** capable of stunning its prey with a charge of up to 200 volts
- **the nurse shark,** which can clamp its jaws so tightly on its victim that the body can only be dislodged by killing the shark
- **a jellyfish** that grows to a length of eight feet, with stinging trailers extending up to 100 feet
- **the sea wasp,** whose venom is so potent, it can paralyze the heart of a man within minutes after entering his bloodstream
- **the giant grouper,** reportedly capable of swallowing a diver *whole!*
- **the barracuda,** whose barely-detectable approach and needle-sharp teeth make him more feared than the shark in some parts of the world

Embark on an action-photo tour of the treacherous undersea world. More than 125 incredible full-color photographs (many of them taken by famed photographer Ron Taylor who has actually survived a white shark attack) give you a close-up view of the ocean's monsters second in drama only to actually confronting them. Send for *Dangerous Sea Creatures* for a 10-day free examination today — and begin a perilous journey to the ocean's floor.

The Zambezi shark of South Africa stalks its prey . . .

# Discover the action-photo excitement of

# Wild, Wild World of Animals

Based on the award-winning TIME-LIFE TELEVISION show, the WILD, WILD WORLD OF ANIMALS library takes you on an astonishing photographic safari to the most action-packed places on earth. You'll roam jungles and plains in *The Cats* to watch cheetahs, leopards and lions hunt, fight and struggle for survival. You'll learn the astonishing secrets of man's closest kin when you enter the world of *Monkeys and Apes.* Future volumes in the series will introduce you to all of the animal kingdom's most fearsome and fascinating creatures. Each will feature 125 brilliant, full-color action close-ups of animals in their natural habitats, as well as a thoroughly-researched text that will reveal their habits as never before. To examine your first volume, *Dangerous Sea Creatures*, for 10 days free, mail the attached postage-paid card today!

**Dangerous Sea Creatures,** your introductory volume in the WILD, WILD WORLD OF ANIMALS, will bring you face-to-face with: Sharks • Rays • Skates • Sawfish • Octopuses • Squids • Electric Eels • Sea Snakes • Sea Monsters • Poisonous and Venomous Fish

**Each volume in the series will include:**
- Some 15,000 words of text
- 128 pages, beautifully hardbound in large 9¼ by 10¾ inch format
- More than 125 full-color photographs
- Extensive anthology of animal writing

. . . and bites a young gray shark in preparation for devouring it.

**Enjoy Dangerous Sea Creatures for 10 days free!**

TIME LIFE TELEVISION
A Division of Time-Life Films, Inc.

**Mail card today!**
or write Time-Life Books
Time & Life Bldg.
Chicago, Ill. 60611

# GIVE ME A CHANCE

. . . to make it on my own!

I know I can do it, if I can only get some help.
Trouble is our Indian family is so poor we're lucky to have food. And I don't even know if I can stay in school.
Unless you help . . .

## Here's What You'll Give . . . and Get in Return

As a sponsor of an **American Indian** child — through Futures for Children — you'll be giving "your" child the money for decent clothing to go to school, unashamed. Money for school supplies. Books. Hair cuts. Sturdy shoes, glasses, a warm coat. And, you'll be giving what is needed most of all — friendship, caring and love.

You'll get letters and photos directly from "your" child and you'll get a lot of love back too. Plus the wonderful opportunity to watch a child grow up with an education and real hope for the future. Right here in America.

Thousands of children need a chance like this. All we ask is that you help **just one.**

_____ I want to sponsor an American Indian child
☐ boy ☐ girl ☐ either
Enclosed is a check for $_____ ($20 monthly; $60 quarterly; $120 semi-annually; $240 annually.)
_____ Can't be a sponsor now, but I'd like to help your program. Enclosed is my tax-deductible donation of $ _____ .
_____ Send me more information about sponsoring an American Indian child.

Name _____ S10
Address _____
City _____ State _____ Zip _____
(All contributions are tax deductible)

**Futures For Children**
4401 Montgomery Blvd, N.E. Albuquerque, N.M. 87109 Toll-Free No. 800 – 545-6843



THE SMITHSONIAN COLLECTION CELEBRATES THE AMERICAN MUSICAL THEATER!

The beginning of a unique new series. We've reconstructed original cast albums of some of America's finest shows, using archival material recorded by the casts and composers.
- Ethel Merman
- Cole Porter
- Bert Williams
- The Astaires
- George Gershwin
- Eddie Cantor.

**Anything Goes.** With Ethel Merman and Cole Porter. (Available in November).
**Lady, Be Good!** With the Astaires and George Gershwin.
**Ziegfeld Follies of 1919.** With Bert Williams, Eddie Cantor and music by Irving Berlin.
The set of three, $18.99 ($18.10—Associates)
Each album, $6.99 ($6.30—Associates)

THE SMITHSONIAN COLLECTION

| *Title* | *Quantity* | *Amount* | *Stock Number* |
|---|---|---|---|
| The Set of 3 Show Albums. . . . | _____ | _____ | R007,R008,R009 |
| Lady, Be Good!. . . . . | _____ | _____ | R008 |
| Ziegfeld Follies of 1919. . . . . | _____ | _____ | R009 |
| Anything Goes. . . . . | _____ | _____ | R007 |

Postage and Handling .90
TOTAL _____

Name _____
Address _____
City _____
State _____ Zip _____

☐ Bill Me. ☐ Check enclosed (Payable to "Smithsonian Institution"). ☐ Please send me The Smithsonian Collection catalogue.
**Mail to:** Smithsonian Customer Service, P.O. Box 10230, Des Moines, Iowa 50336.
Please allow 4-6 weeks for delivery.
I am ☐ am not ☐ a Smithsonian Associate PA31


# *Smithsonian highlights*

*Festival of American Folklife*
The 11th annual Smithsonian festival to celebrate the American heritage of music, arts, crafts and food will be held October 5 to 10, with free events and entertainment in and around the Natural History Museum and the Museum of History and Technology, in the Renwick Gallery and on the Monument grounds (p. 142).

*Hirshhorn Museum and Sculpture Garden*
"Probing the Earth: Contemporary Land Projects," photographs, drawings and models of the often-huge land constructions of 12 artists, October 27-January 2.

A "Kenneth Noland Retrospective" will be shared by the Hirshhorn, which will present early works (1948-1966), and the Corcoran Gallery of Art, which will exhibit recent works (1967-1976). The widely known color abstractionist first gained national attention while he was living in Washington from 1949 through 1962. The Hirshhorn exhibition comprises 45 pieces, including the "Target" paintings of the late Fifties and the elliptical shapes and chevrons of the early Sixties, October 1-November 27.

*National Air and Space Museum*
The Hall of Air Transportation has reopened following the addition of two planes: a Douglas M-2, early airmail carrier, and a Beech D-18S, once used as a flying ambulance in Arizona.

*Renwick Gallery*
"French Folk Art" opens October 28 with more than 125 objects including toys, tools, kitchen utensils and costumes.

The show was organized by the Smithsonian's Traveling Exhibition Service and will close June 4, 1978.

*Museum of History and Technology*
The Museum will provide three free noontime musical concerts in Carmichael Auditorium. On October 14, the George Mason University Chorus will perform; on October 17, the U.S. Army Band will play blues; and on October 28 the George Mason Chorus will give a return performance.

*Museum of Natural History*
"Splendors in Nature" will gather together the most beautiful natural objects selected by the museum curators. The collection will remain as a permanent exhibit, opening on October 22 (p. 115).

*Freer Gallery*
"Chinese Album Leaves and Fan Painting" is the subject of a special exhibition at the Freer, through March 1.

"Four Seasons in Japanese Art" continues.

*National Portrait Gallery*
On October 15 "Portrait of a New England Town," three mural-size paintings by Alice Stallknecht, opens at the Portrait Gallery. The paintings present a study of the Cape Cod town of Chatham and will be exhibited until November 27.

An exhibit opens October 3 on the life and work of Harriet Beecher Stowe, author of *Uncle Tom's Cabin*.

*Cooper-Hewitt Museum*
The "Cooper-Hewitt Collections," a major exhibition of objects from the Museum's holdings, showing how the departments are closely interrelated and how they function as a unit, continues through December 31 in New York.

"To Celebrate the Moment," from November 15 through the holiday season, will include objects designed for special celebrations—Christmas, Hanukkah, Thanksgiving, New Year's, birthdays.

*Division of Performing Arts and Musical Instruments*
- October 6: Jimmy Witherspoon joins the Airmen of Note; open rehearsal at 4 P.M., performance at 8 P.M.
- October 10: opening concert of the


DEERSKIN TRADING POST

**Deerskin's Exclusive Stockman™ Jacket**

The Stockman is a good-looking, rugged jacket that will last for years! Made of imported, sueded cotton and lined with fleecy Sherpa®. Soft to the touch, inside and out. Very warm, yet lightweight. And water-repellent. You can wear it in any weather, three seasons of the year! Casual shirt styling, with secure snap closings, in **Natural** brushed cotton.

**Wear it for 30 days, risk-free!**

MAIL YOUR ORDER TO
DEERSKIN TRADING POST
Dept. KC, 119 Foster St., Peabody, Mass. 01960

Name _____
Street _____ Apt. No. _____
City _____ State _____ Zip _____
☐ Please send me one Stockman Jacket for $29.50.
☐ Please send me two Stockman Jackets for $55.00.
**CIRCLE SIZE BELOW:**
Man's Stockman Jacket. S M L XL (Y0231) (Y2208)
Woman's Stockman Jacket. S M L (Y2202) (Y2207)

Add $2.00 for Shipping and Handling. Enclose check or money order or fill in credit card information below.
☐ Master Charge ☐ American Express
☐ BankAmericard ☐ Diner's Club

Your credit card number (minimum 12 digits needed)
Your card-issuing bank name Card Expires
Your Signature

**THE WALL SCALE— Always Accurate**

Space-saving scale takes no room on counter, folds up dust-free when not in use! Precise weights from ¼ oz. to 6 lbs. 10 oz. And metrics, 10 grams to 3 kilos, so you're set for life when the changeover comes. Set for lifelong accuracy, too, because it has no springs—a pendulum scale that's forever exact! Essential for medical or weight-loss diets, for precise roast timing—Danish designed and crafted, recommended by James Beard, and guaranteed. Super-tough white ABS resin, easy to mount on wall or cabinet door—screws and instructions included. 8½" pan lifts off for hand washing. Brightly gift boxed.
**9343 Precision Wall Scale $22.50**

*Add $1.50 postage & handling, NY residents add taxes.*

**The Country Gourmet**
Dept. TO3,
512 S. Fulton Ave., Mt. Vernon, NY 10550

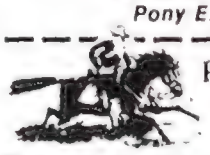
# ONE OF THE LAST GREAT ANTIQUE BUYS

You are invited to become one of the few Americans today lucky enough to own not a copy, not a replica, not less than an authentic circa 1900 antique schoolhouse clock like the kind that once ticked happily away in the front parlors, general stores and one-room schools of our childhood. Each is unique and in 100% running order. Yours will be numbered, registered to your family or whomever you designate and accompanied by a handsome **Certificate of Age & Ownership** (suitable for framing). You could expect to pay far more at auction or antique shop for just such a clock. **To assure ownership at this special price, order now.**

## The Original Schoolhouse Clock $110.00

- Satisfaction Guaranteed or money refunded.
- Certificate of age, authenticity, ownership.
- Fully re-conditioned 8-day keywind movement, brass pendulum, key. Counts each hour in deep melodic tones.
- Finely polished and carefully restored hardwood case, approx. 22" H, 13" W, 4½" D.

***When in New York, visit the Pony Express Showroom***



PONY EXPRESS SYSTEM
2986 Navajo St., Dept. S-108
Yorktown, N.Y. 10598

Please send me_____clock(s) @ $110.00 plus $6.00 for insured delivery for each. Please register to the name(s) attached. My check is enclosed for $_____. (N.Y. State residents add 5% sales tax.)

We Honor Master Charge, American Express & BankAmericard. Include signature & appropriate data or for faster service call 914-248-7031.

Mr./Ms. .....

Address ..... Apt. # .....

City ..... State ..... Zip .....


tenth anniversary season of the Theater Chamber Players, 8 P.M.

- October 13: Washington singer Ronnie Wells performs with the Airmen of Note; rehearsal at 4 P.M., concert at 8 P.M.
- October 16: harmonica, guitar and songs by Sonny Terry and Brownie McGhee at 8 P.M.
- October 17: "An Evening of Music for Four Hands": Mozart and his contemporaries played by pianists Bradford Tracey and Rolf Junghanns at 8:30 P.M. in the Hall of Musical Instruments in the Museum of History and Technology.
- October 18: the Performing Arts Program of the Asia Society will present two Indonesian dances at 8 P.M.
- October 20: Billy Taylor joins the Airmen of Note on piano at 8 P.M.; open rehearsal at 4 P.M.

Many of the above events are free, but all concerts require tickets. For information call 381-5395. Unless otherwise specified, above performance will be at Baird Auditorium, Natural History Museum.

*Smithsonian Institution Traveling Exhibition Service*

If you would like to see a Smithsonian Institution exhibition in your own neighborhood write for details: Smithsonian Traveling Exhibition Service, Washington, D.C. 20560.

- Mobile, Alabama—"Mr. Audubon and Mr. Bien," an exhibition of an early phase of American chromolithography, Fine Arts Museum of the South, October 8-November 6.
- San Bernardino—"Photographing the Frontier," California State College, October 1-30.
- San Francisco—"Rails of the World," California Academy of Arts and Sciences, October 15-November 13.
- Jacksonville, Florida—"Salzburger Festspiele!" presents 23 costumes from the Salzburg Festival, the oldest and most prestigious of Europe's music and drama festivals, Jacksonville Children's Museum, October 1-30.
- Topeka, Kansas—"Space Art from the USSR," Gallery of Fine Arts, October 8-December 25.
- Louisville, Kentucky — "Toys from Switzerland" Museum of Natural History and Science, October 15-November 27.
- Worcester, Massachusetts—"Jack Tar—American: Profiles of Merchant Seafarers, 1783-1804," allows a glimpse of the life of an average American seafaring man of the early Federal period, George C. Gor-

**Calculator/Metrivertor® puts More "Brains" in your fingers**

Astonishing value. Solid state pocket calculator, with memory, handles all normal calculations; is also *pre-programmed* to convert Metric measurements at the touch of a button. Converts to or from metric: length, weight, temperature, wet and dry measure and other common measures. Just enter or calculate in either, then press "convert" keys to read in the other system. Operates on AA batteries (included). Satisfied or money back. (MC, BA, AE, call 513/294-4000).

Memory Calculator/Metrivertor $29.95
Add $1 for post. hand. & ins. 4½% s.t. OH res.

BETTER IDEAS
2226 Arbor, Dept. 108-B, Dayton, OH 45439

This long 70" silver-plated necklace is handcrafted in a villager's cottage at Coban, high in the mountains of historic Guatemala! Authentic in design — entirely handmade, intricate link by link. Its Quiche tradition is as old as the ancient Mayans. The custom of the groom giving his bride a lifetime silver chain continues today. $23.60.

**Mayan Wedding Necklace and Earrings Airmailed from Guatemala**

Companion earrings optional! Screw or wire. $10.80.

**Flown directly from Guatemala duty-free, air ppd.**

Bernardo's Door 26 (S)
3131 Southwest Freeway
Houston TX 77098

***Try a little tenderness*** There are so many special occasions. And, one of the best is shared by just the two of you. Candlelight, wine and magnificent aged Filets. From Omaha Steaks. Perfect! Experts select and prepare each Filet. Their artistry in cutting and aging is your assurance of the utmost in enjoyment. Try a little tenderness soon.

**No. 460 Six 6-oz. Filet Mignon, 1¼" thick (reg. $30) Del'd . . . $19.50**

Save $10.50. Limit 2. Valid only in 48 connected States. Arrival in perfect condition guaranteed. Phone or mail order. Use major credit card and

***Call Free (800) 228-9055***

24-page catalog of our complete line free with order. For catalog only send $1

Omaha Steaks International®
Dept. 3232, 4400 So. 96th St., Omaha, NE 68127

# Jimmy Doolittle by Paul Calle

The National Air and Space Museum has produced a limited edition of 1000 high-quality reproductions of Paul Calle's graphite pencil portrait of Lieutenant General James H. Doolittle. This unique numbered edition measures 19" X 29" and is signed by both Doolittle and Calle. It is the companion print to the Neil Armstrong edition issued earlier.

Calle portrays Jimmy Doolittle in his uniform as Commanding General of the Eighth Air Force and captures his spirit of enthusiasm for aviation in this rare portrait. Jimmy Doolittle is acknowledged to be one of the greatest pilots, the only man to win the three prestigious Schneider, Bendix, and Thompson Trophy Races. As a test pilot and engineer he was a leader in developing the instruments and techniques that enabled pilots to fly "blind," without external visual references.

Jimmy Doolittle became a war hero when he led a group of B-25's on the daring Tokyo Raid, the first U.S. bombing of Japan. He then went on to command the Twelfth, Fifteenth, and Eighth Air Forces. After leaving the military he continued to serve the country on many national committees and commissions.

All profits from the sales will be donated to the *Charles A. Lindbergh Memorial Fund*, which has been established to provide fellowships and grants to deserving individuals in the areas of science which most interested Lindbergh, such as aeronautics, conservation, exploration, and wildlife preservation.

You will receive your print in a handsome portfolio which contains biographies of the artist and the general, as well as an authenticated receipt of your purchase. Orders will be processed as they are received. The usual Smithsonian Associates discount will NOT apply to this offer.

19" X 29" "Lt. General James H. Doolittle" by Paul Calle

"Artist Paul Calle (left) meets with Lt. General James H. Doolittle (Jimmy, right) during the preparation of his portrait."

$50 may be taken as a charitable contribution to The Charles A. Lindbergh Memorial Fund.

**Doolittle Portrait**
**National Air and Space Museum**
**Smithsonian Institution,**
**Washington, D.C. 20560**

Please send me _____ signed and numbered portrait(s) of Lt. General James H. Doolittle by Paul Calle. Enclosed is $125. for each reproduction ordered.

Name

Street *please do not give a Post Office box number*

City

State Zip

*Please use U.S. currency and add $5.00 for delivery outside continental United States.*

# PAST-LOVER

Admit it—you've always been secretly fascinated by the mysteries of antiquity... always wondered what life was really like in ancient Egypt, China, Greece, Mexico, Peru. Find out in ARCHAEOLOGY MAGAZINE! Six times a year its authoritative, clearly-written articles and stunning color photographs bring the ancient world alive. Meet the peoples of the past. Marvel at their achievements, and admire the beauty they left behind. There's nothing else like ARCHAEOLOGY. Try it now!

ARCHAEOLOGY MAGAZINE Dept. 41
260 West Broadway, N.Y., N.Y. 10013

Please send ARCHAEOLOGY to

Name _____

Address _____

City _____ State _____ Zip ____

☐ One year $15 ☐ Payment enclosed
☐ Two years $27 ☐ Bill me

Add $2.00 outside U.S.A

Send gift card signed. _____

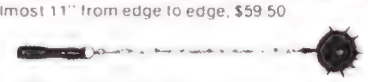


## Collectors of the Past

Here is a collection you'll take pride in owning. Authentic reproductions of historic pieces, all are full size and weight, each piece is individually handcrafted using techniques used in the 14th century. These are beautiful pieces that will enhance your home, office or business.

THE ARKANSAS TOOTHPICK One of America's most famous fighting knives. It has a 12" blade and a 5" handle. The guard and butt are solid brass. $35.00. Also available for this knife is a teakwood plaque, $12.00, and a fine quality leather sheath, $6.00.

THE DOUBLE-HEADED BATTLE AXE This exquisite artifact is 31" long, the handle is of carved rosewood, the heads are ground steel with polished steel tapered edges and almost 11" from edge to edge. $59.50.



THE FLAIL, OR MORNINGSTAR An impressive reproduction of 14th century inventiveness. 30" long with a massive steel spiked ball, this piece would create conversation in any den or office. $29.50.

THE MACE This is another outstanding piece from the 14th century. This beauty is 30" long and would fit well with the rest of your collection. $29.50.

Order now for Christmas

*Order each piece by name and price. (Please add $3.00 for postage and handling with each order.)*

Authentic Reproductions
800 Kersey Road
Silver Spring, Md. 20902


don Library, October 15-November 13.

- Lincoln, Nebraska—"Coast to Coast Coasters," (See SMITHSONIAN, August 1977), University of Nebraska College of Architecture, October 8-November 6.
- Carson City, Nevada—"Photographing the Frontier," Nevada State Museum, October 1-30.
- San Francisco, California—"Victorian Needlework," Chevron Gallery, October 15-November 13.

*Associate Reception in Washington*

Upon arrival at the Smithsonian members are invited to register in the Associates Lounge in the Smithsonian castle on the Mall. Here, from 10 A.M. to 4 P.M. daily, a special orientation and printed materials are available.

Associates planning trips to the Smithsonian may send a postcard or call for an information packet: Associates Reception Center, Smithsonian Institution, Washington, D.C. 20560; call (202) 381-6264.

If you have misplaced your membership card, the Associate receptionist in the castle will issue a replacement upon presentation of your SMITHSONIAN magazine address label. Membership cards are required for access to the Museum of Natural History's Court (luncheon, seven days a week; breakfast, weekends 8:30- 10:00 A.M.—use Constitution Avenue entrance) and discounts in the museum shops.

*Parking for Visitors*

Street parking near the Smithsonian complex is difficult. Use of public transportation is recommended. The Air and Space garage, 7th Street and Independence Avenue, S.W., is open weekdays from 7 A.M. and weekends from 9 A.M. until one hour after museum closing.

The Smithsonian station of the Metro subway system links the Virginia suburbs (and later Maryland) with the museum complex, as does the more extensive Metrobus system. A list of free Metrobus fringe parking lots, located at strategic points on the outskirts of the metropolitan area, is available from the Associates Reception Center at the above address.

*Museum Hours*

The museums are open daily from 10 A.M. to 5:30 P.M. The National Zoological Park opens its grounds from 6 A.M. to 5:30 P.M., buildings 9 A.M. to 4:30 P.M.

SCULPTURAL STONEWARE CANDLEHOLDER

A lit candle placed in these exciting holders will create wonderful dancing shadow figures on walls while arm in arm the figures reveal community as they gaze together toward the light. Inspired by early Mexican and Indian pottery and made of naturally rich toast-colored clay, each piece is hand-crafted and signed by Peter Craft, master potter. An informative gift card is included with each.

CH1 1 tier, 4" high $14.00 ppd.
CH2 2 tier, 6" high $22.50 ppd.
Mass. res. add 5% tax

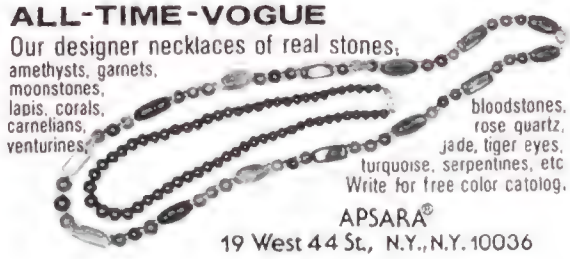
Satisfaction guaranteed—order for Christmas early please—two make a nice pair—send check or money order to:

**PEOPLE POTTERY**
**Box 751**
**Lenox, Mass. 01240**



**ALL-TIME-VOGUE**

Our designer necklaces of real stones;
amethysts, garnets, moonstones, lapis, corals, carnelians, venturines,
bloodstones, rose quartz, jade, tiger eyes, turquoise, serpentines, etc
Write for free color catalog.



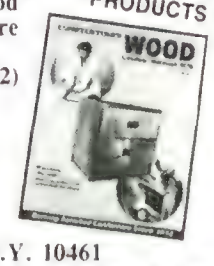
APSARA®
19 West 44 St., N.Y., N.Y. 10036



# Wood/Craft Catalog

**with 20 wood samples** 2000 PRODUCTS

Finest veneers, woods, tools, period hdwe. Plans, how-to books, picture molding. Everything to help you Build, Restore, Refinish. (est. 1812)



**Catalog and samples $1**
Dollar refunded on 1st order

Catalog without samples 50c

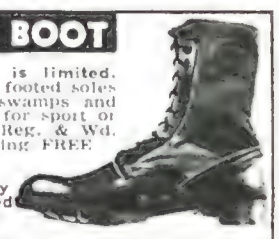
**CONSTANTINE**
2067 Eastchester Road, Bronx, N.Y. 10461

★★★★★★★★★★★★★★★★★★★★★★★★



**"NAM" JUNGLE BOOT**

BRAND NEW . . . Supply is limited. Fitted to the toughest surest footed soles to protect our GIs in the swamps and highlands of Vietnam. Great for sport or heavy work. Szs. 6 to 12. Reg. & Wd. No half szs. Write for exciting FREE catalogue. ACT NOW!



**$18.95** plus $1.95 pstg. Heavy cleated sole

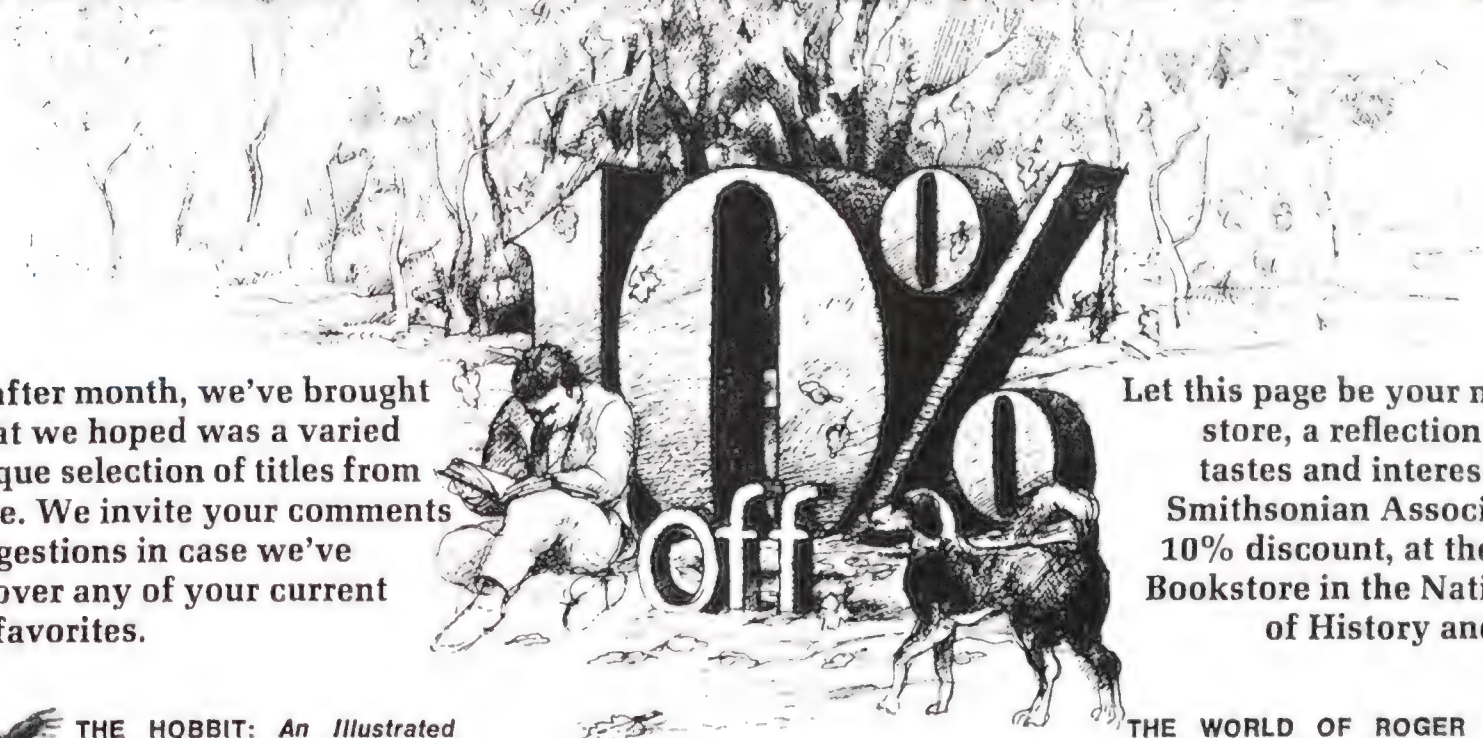
Bill's MILITARY STORES, 18 W. Duval, Dept. N, Jax, Fla. 32202

**Perpetual Vinegar Maker**

Just pour wine leavings into our beautiful brass-hooped Red Wine Vinegar Barrel. "Mother" enzymes inside convert wine into an endless supply of pure natural vinegar. (No additives or preservatives.) Handsome 6" x 8" oak cask comes with half-gallon starter supply of most mellow vinegar you've ever tasted, aged for minimum of 3 months. Makes incomparably zesty sauces, salad dressings, marinades. Perfect holiday gift for friends who love good food, good cooking. And a stunning "conversation piece" on kitchen table, shelf or workspace. Acclaimed by gourmets Craig Claiborne, Mimi Sheraton, Burton Wolfe, etc. Only $39.95 (+ $3 pstg., hdlg.) Money-back guar. Write for free details, or call toll free (800) 344-3221 (outside Cal.) In Cal. call collect (209) 477-0343.

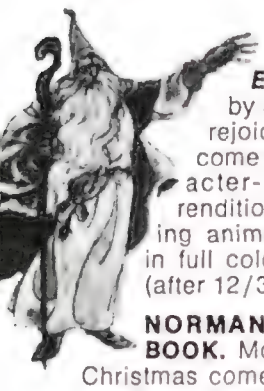
**FRANJOH CELLARS,** Dept. SM-1
P.O. Box 7462, Stockton, CA 95207

# SMITHSONIAN BOOKSTORE




**Month after month, we've brought you what we hoped was a varied and unique selection of titles from our store. We invite your comments and suggestions in case we've passed over any of your current or past favorites.**

**Let this page be your monthly bookstore, a reflection of your many tastes and interests. As always, Smithsonian Associates receive a 10% discount, at the Smithsonian Bookstore in the National Museum of History and Technology.**



**THE HOBBIT:** ***An Illustrated Edition With the Original Text*** by J. R. R. Tolkien. Tolkien fans will rejoice as hobbit's magical exploits come alive in this deluxe edition. Character-by-character, scene-by-scene rendition in glorious color of the upcoming animated TV Special. 300 illus., 200 in full color with two 36″ foldouts. $29.95 (after 12/31, $35.00) **01.**

**NORMAN ROCKWELL'S CHRISTMAS BOOK.** Molly Rockwell, Consulting Editor. Christmas comes but once a year, but a Christmas book like this comes but once in a lifetime. 100 plates in full color, 20 b&w chosen from his entire body of work to illus. Christmas themes. Stories, poems, and songs by the world's greatest writers comprise a rich text. $18.95 **02.**

**MAGNIFICATIONS:** ***Photography with the Scanning Electron Microscope*** by David Scharf. Having perfected a new technique for photographing with S.E.M, the author takes our eyes to places we've never been to encounter a world we never see through photos of living and inanimate subjects caught in striking detail and relief. $24.95 **03.**

**GEORGIA O'KEEFFE** by Georgia O'Keeffe. The author, one of America's foremost painters, articulates her life and work in this magnificent volume. Reissued in a new format, all the paintings (over 100 in color), text and pages are as in the original higher-priced edition. (cloth) $29.95 **04.** (paper) $14.95 **05.**

**THE RIVER CONGO:** ***The Discovery, Exploration and Exploitation of the World's Most Dramatic River*** by Peter Forbath. Read this lavishly illustrated, solid story of the great and often cruel events of history that touched the life of this still mysterious river. $15.00 **06.**

**THE CITY OF WASHINGTON:** ***An Illustrated History*** by the Junior League of Washington. Abundantly illustrated, with over 600 b&w photos, maps, drawings, many never before published, this well researched history of the capital is one you'll enjoy and cherish. $25.00 **07.**

**THE LIFE AND DEATH OF THE HARP SEAL** by Fred Bruemmer. A miracle of nature's adaptation to the world's frozen ice floes, the harp seal knows few natural enemies — save man. In this lyrical evocation of its life, and encounters with man, stunning photos in color and b&w complement a moving text. $19.95 **08.**

## OCTOBER SELECTIONS

### —SPECIAL SALE BOOKS—

**THE ENCYCLOPEDIA OF AIR WARFARE.** One of the most comprehensive volumes on the history of war in the air. 320 full color drawings of major aircraft in combat; maps, diagrams, detailed charts. **09.**
Pub. at $17.95 Sale $10.98

**THE ENCYCLOPEDIA OF SEA WARFARE.** The authoritative book covers the dramatic events of naval history. 50 detailed drawings of famous warships, plus maps of battles and over 250 action pictures. **10.**
Pub. at $17.50 Sale $10.98

**PORTRAITS OF NORTH AMERICAN INDIAN LIFE** by Edward S. Curtis. The monumental classic capturing the spirit of the Indian lifestyle includes over 80 full-size (15 x 17) portraits suitable for framing. A must for collectors.
Pub. at $35.00 **11.** Sale $22.98

**AMERICAN FASHION:** ***The Life and Lines of Adrian, Mainbocher, McCardell, Norell, Trigere.*** Edit. by Sarah Tomerlin Lee. Leading authorities write about these five American fashion geniuses, enhanced by hundreds of photos by celebrated photographers. A magnificent volume.
Pub. at $35.00 **12.** Sale $14.98

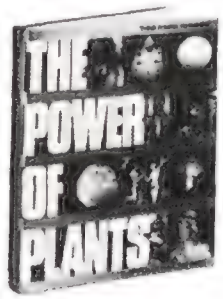
**THE INTERNATIONAL ENCYCLOPEDIA OF RAILWAYS.** One of the most comprehensive and beautifully illustrated history of railways, with over 480 full color photos, glossary, index by more than 20 leading authorities around the world. **13.** Special Value $19.98

**THE NEW WEBSTER'S ENCYCLOPEDIC DICTIONARY OF THE ENGLISH LANGUAGE.**
Pub. at $39.95 **14.** Sale $12.98

**GRAY'S ANATOMY.** The Classic 1901 work on anatomy in this most complete and beautiful edition. 780 illustrations, 172 in full color. 1,257 pp. (hardbound) $7.98 **15.**

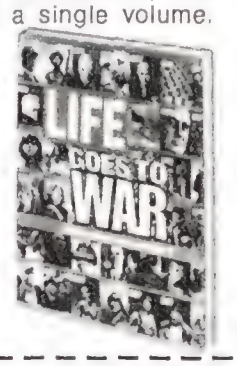
**THE WORLD OF ROGER TORY PETERSON:** ***An Authorized Biography*** by John C. Devlin and Grace Naismith. Foreword by Elliot Richardson. America's most eminent naturalist is the subject of this eagerly awaited first biography. Written with his complete cooperation, it is an illuminating portrait of an extraordinary man and his work. Illus. $14.95 **16.**

**ROYAL HERITAGE:** ***The Treasures of the Kings and Queens of England*** by J. H. Plumb and Huw Wheldon. The paintings and palaces, the *objets* and jewels, the furniture and manuscripts collected over a thousand years by the English royal family are seen in over 100 color and 300 b&w illus. $25.00 **17.**




**THE COURTS OF EUROPE:** ***Politics, Patronage and Royalty 1400-1800.*** Edit. by A. G. Dickens. One of the most fascinating periods of European history is brought to life in the colorful (over 300 illus., 63 in color) and authoritative volume by a distinguished historian. $24.95 **18.**

**THE POWER OF PLANTS** by Brendan Lehane. The awesome power of plants to survive, to sustain, to heal and kill, to alter consciousness and to become our religious symbols — all these aspects of plant life are described and beautifully enhanced by 800 color illustrations, one of the finest assemblages in a single volume. $34.95 **19.**




**LIFE GOES TO WAR A Picture History of World War II.** Edited by a special Time-Life staff. A pictorially spectacular history of the biggest story *Life* ever covered is found in this abundantly illustrated, large-format volume, in the tradition of other great *Life* books. $19.95 **20.**

**THE SMITHSONIAN BOOKSTORE / a McGraw-Hill Enterprise**
14th Street & Constitution Avenue, N.W. • Washington, D.C. 20560 • Tel. 202/381-5248
Open 10 a.m. to 5:30 p.m.

Please rush me the following books: (use cat. no.)

_____
_____
_____
_____
_____
_____

Check, money order or credit cards accepted. 1077

Charge my ☐ American Express ☐ BankAmericard ☐ Master Charge

Account No _____ Expires_____

As a Smithsonian Associate, I am entitled to take 10% off the list price of the above book(s). I will then add 65¢ per book for postage and handling, plus applicable sales tax.

Name _____

Address _____

City _____ State _____ Zip _____

# Exploring the World with the Smithsonian

*For both the seasoned and would-be traveler, the Smithsonian has developed a travel program to meet a variety of tastes and budgets. In an effort to meet the increasing growth and interests of Smithsonian Associates, the tour programs have expanded, bringing travelers to places reflecting the Institution's interests. Whether the destination be a foreign land or a site in the United States, the Smithsonian has planned an intriguing, educational experience, and often an adventure. Smithsonian personnel evaluate the travel offerings and accompany all trips.*

*Three types of trips are available, Study, Charter and Domestic, each with its distinct character. Foreign Study Tours provide small groups with culturally oriented, specialized trips, under the guidance of museum curators, or experts in respective fields. Foreign Charter Tours are larger (they are broken up into several small groups under the leadership of skilled guides and interpreters), lower in cost, combining study, discovery and vacation. Domestic Tours offer specialized guidance and expertise of a kind generally unavailable to persons traveling on their own.*

**Predeparture lectures and courses are optional on many of the foreign tours.*

## Foreign Study Tours

Egypt and Petra via Red Sea—January 30-February 9, 1978: Plane via London to Cairo, board MTS *Argonaut* at Suez for Red Sea, visiting Luxor from nearby port before cruising on to Jordan for Petra.

Himalayan Cultures—March 4-27, 1978: Delhi, Agra, Calcutta, Darjeeling, Nepal, including tigers and Everest viewing, and Bhutan for a five-day exploration.

Medieval Southern France—April 2-16, 1978: Museums, architecture and gastronomy from Paris to Barcelona via Périgueux, the Dordogne, Conques, Moissac, Toulouse, overnight on Canal du Midi.

Gods and Gardens in the Western Mediterranean—April 29-May 15, 1978: Cruise on MTS *Argonaut* from Rome to Lisbon, visiting Roman and medieval centers of civilization in northern Italy and France; spring gardens at their height, plus Barcelona's museums and architecture, Moorish Spain and Tangier.

Thomas Jefferson in England and France—July 9-30, 1978: His travels retraced, with emphasis on country houses and gardens he admired plus appropriate areas and houses in London, Paris and Nîmes; led by Professor Frederick Nichols of Charlottesville.

Aegean Sites of Civilization—October 7-29, 1978: A cruise on MTS *Argonaut* with Dr. Richard H. Howland, including Thrace, Istanbul, Troy, Ionia, Mt. Athos, Mistra, Thera, Crete and principal classical sanctuaries, leaving from and returning to Athens. *Optional prelude may be the following:* Nostalgic Orient Express—October 2-8, 1978: vintage cars restored to superb condition, over original Simplon routing from Zurich to Athens: occasional sightseeing stops en route.

For detailed information write Miss Bliss Schumann, Foreign Study Tours, S.I. 123, Smithsonian Institution, Washington, D.C. 20560 or call (202) 381-5520.

## Foreign Charter Tours

Mayan Mexico: The Yucatán Peninsula—January 6-18, January 28-February 9, November 10-22 or December 2-14, 1978: A complete tour of the extraordinary Mayan ruins of the Yucatán. Accompanied by an archaeologist, visit the sites of Chichén Itzá, Palenque, Uxmal, Tulum, plus the seldom visited sites of Edzna, Kohunlich, Rio Bec and Cobá. Also includes a brief pause at Akumal on the Caribbean Sea. An adventure tour. (Originates in Mérida).

Guatemala—February 9-19 or November 22-December 2, 1978: In the company of an archaeologist, visit Tikal, the monumental Mayan city of the Petén jungle; Copán, a Mayan site deep in the mountains of Honduras; plus the Mayan ruins of Quiriguá, El Baúl and La Democracia. Travel to the Guatemalan Highlands to visit Lake Atitlán and Antigua—the Spanish colonial capital preserved in its 17th- and 18th-century splendor. Also visit Chichicastenango with its ancient market and Indian rituals. Guatemala is a must for Mayan archaeology and Indian textiles. An adventure tour. (Originates in Guatemala City).

Kenya, East Africa—February 3-19: Wildlife and tribal life adventure providing modern African insight—and the "Africa that used to be," in the old safari tradition. Seminars in Nairobi and in the field —Masai Mara; Samburu; Tsavo.

Italy*—May 1-15: The complete Rome plus choice of Travel Seminars to Florence, Venice or Campania; museum seminars; walking tours of ancient sites; Baroque churches and Renaissance palaces in Rome; excursions to Tivoli, Ostia Antica, Etruscan ruins, or along the Appian Way.

Russia*—May 8-22: Leningrad, Tallinn and Moscow; see the Hermitage and Tretyakov Museums, the palaces of Pushkin or Petrodvorets; life-seeing visits to schools, factories or clinics; attend the Russian theater and circus.

Paris and Provence*—May 15-29 or September 4-18: Paris plus Avignon, Arles, Nîmes and Aix-en-Provence; museum seminars at the Louvre and the new Pompidou center; walking tours of the islands of the Seine; excursions to the Loire, Chartres or Reims.

Scotland*—September 25-October 9: Edinburgh and beyond—a program of walking tours and special visits in Edinburgh; visits to castles, abbeys, battlefields and archaeological sites, plus incomparable scenic beauties of rugged mountain glens and rolling hillsides throughout the Highlands and Lowlands of Scotland.

The Caucasus: Armenia, Azerbaijan and Georgia*—October 9-23: The spectacular mountain scenery of Transcaucasia; the ancient cities of Erevan, Tbilisi and Baku; medieval churches and mosques; the Caspian Sea and mountain fortresses.

New Zealand and Fiji—November 17-December 5, 1978: Departing Los Angeles, this tour visits Mt. Cook, Te Anau and Milford Sound, plus Auckland, Rotorua, Wellington and Christchurch. Included will be talks on New Zealand's natural history, Maori heritage, parliament, plus a home visit. Brief rest stop at Fiji included before return flight to West Coast.

Low cost of tours includes first-class hotels, most meals, sightseeing, lectures, theater tickets and air fare. *Optional predeparture course will be available. Write Smithsonian Associates Travel Program, A&I 1270 B, Smithsonian Institution, Washington, D.C. 20560 or call (202) 381-5635 for details.

## Domestic Study Tours

Archaeological Dig—October 15-22: Join archaeologists in the excavation of an Illinois River Valley site spanning almost 10,000 years. Actual digging will be supplemented by instruction, lectures, laboratory work and field trips.

**Membership Benefit**

## *Plan Now For Fall, Winter And 1978*

**National Air and Space Museum Weekend for the Blind**—October 28-30: Special programs are planned with the museum curators to give meaning to the displays.

**Antebellum Homes of Alabama**—October 29-November 6: Under auspices of local historical societies, we will learn about the history and traditions of this "golden era."

**New York City**—November 11-14: An exciting weekend of special art museum tours, including the Cooper-Hewitt, the newest Smithsonian museum.

**Christmas at the Smithsonian**—December 9-11: Sixth annual Christmas weekend with traditional tree-trimming party and holiday festivities. Special program at the Renwick Gallery; private viewing of the First Ladies' gowns and Presidential china; behind-the-scenes tours in the Smithsonian castle and National Zoo.

**Colonial Crafts**—January 18-22: Learn about 18th-century crafts such as graphic arts, woodworking and textiles, through an in-depth program of special lectures, films and demonstrations by Williamsburg's skilled craftsmen. Enjoy the gracious atmosphere of the Williamsburg Inn, and the cozy fires and leisurely pace of Williamsburg in the winter.

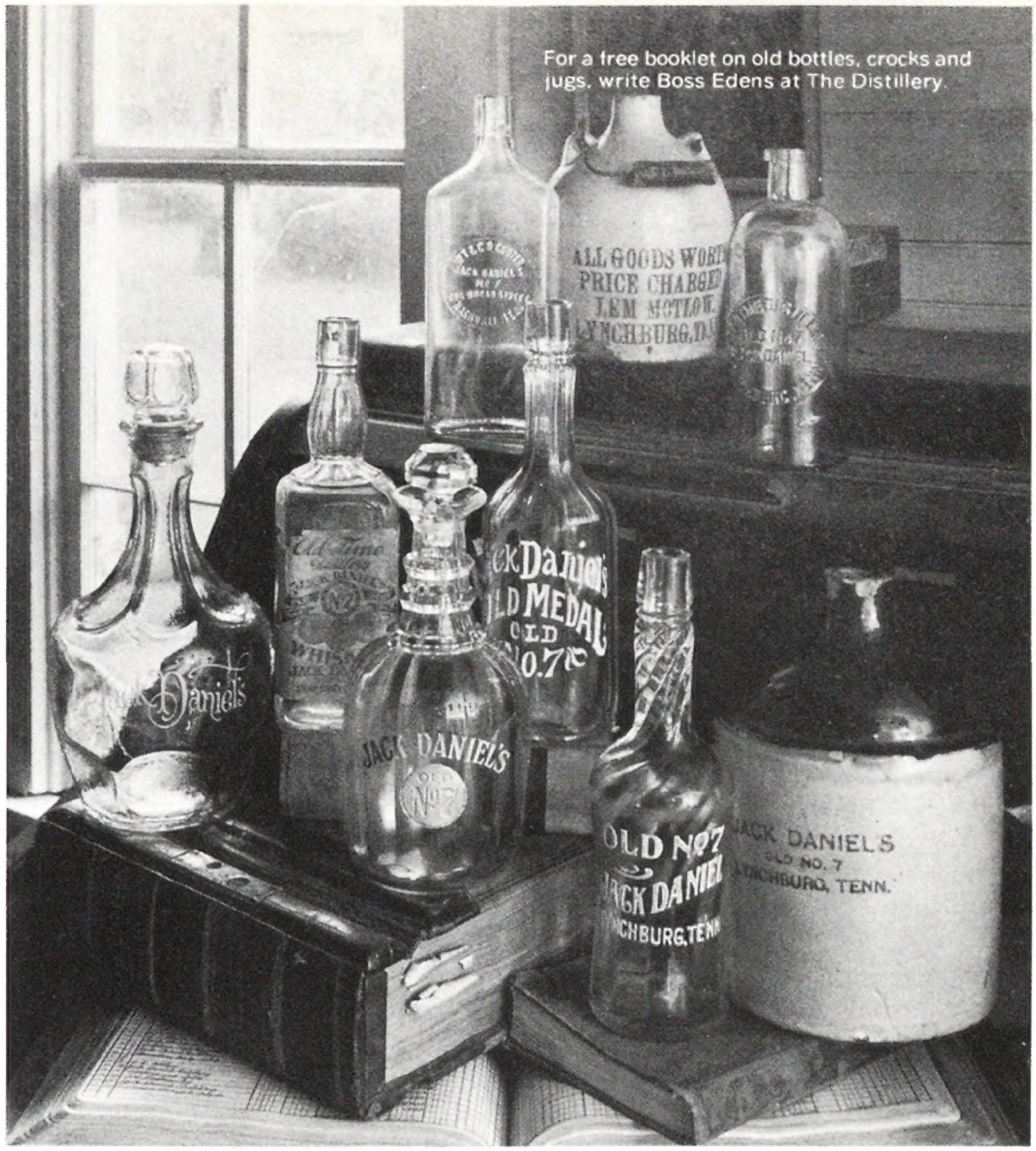
**Victorian Washington**—January 27-29: A fascinating program of lectures and neighborhood walking tours to learn about the city's 19th-century architecture and history.

**Baja Whale Watch**—February 18-25: Travel by chartered sport-fishing boat from San Diego to San Ignacio Lagoon; study the California gray whale and other marine life through observation, on-site lectures; hike on deserted islands, study the Baja plant and bird life.

**Yellowstone in Snow**—February 24-March 5: Explore Jackson, Wyoming, in the shadows of the magnificent Tetons; discover Yellowstone in the peace of its winter season, learn about the wildlife of the park and the surrounding region.

**Washington "Anytime" Weekend**—Visit the nation's capital and tour the original Smithsonian building. Spend two nights at Loew's L'Enfant Plaza Hotel (reservations required ten days prior to weekend).

For information write Smithsonian Associates Travel Program, A&I 1270 B, Smithsonian Institution, Washington, D.C. 20560 or call (202) 381-5635.


THESE OLD BOTTLES go back to the days when Jack Daniel made them to observe special occasions.

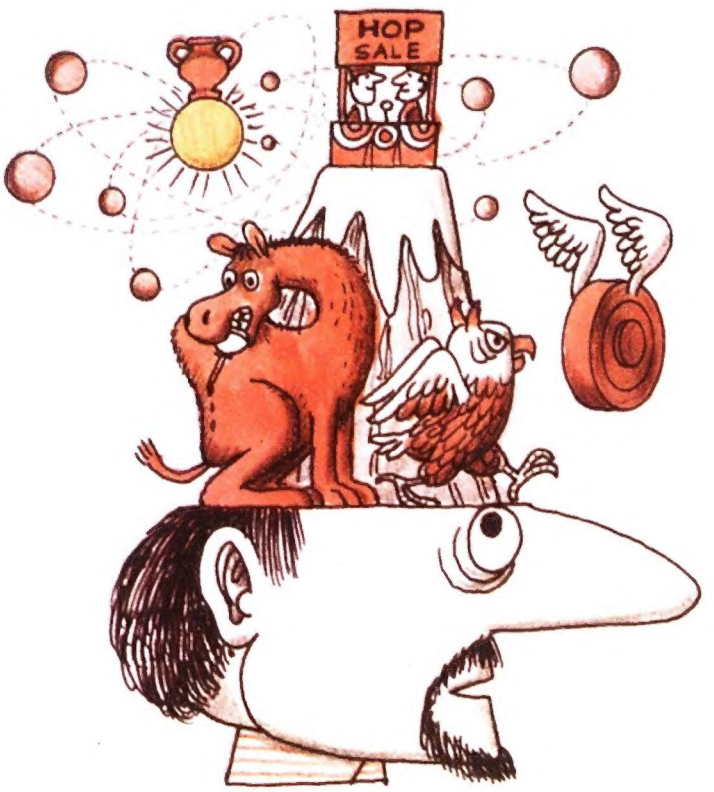
One was for winning the Gold Medal at the 1904 World's Fair. And another, in 1896, on the 100th anniversary of Tennessee statehood. He even had his nephew make a special bottle for his favorite hotel, the Maxwell House, in Nashville.
But when it came to whiskey, Mr. Jack insisted on charcoal mellowing every drop. He was too good a whiskey man to change that, no matter what the occasion.

CHARCOAL MELLOWED
DROP
BY DROP

Tennessee Whiskey • 90 Proof • Distilled and Bottled by Jack Daniel Distillery
Lem Motlow, Prop., Inc., Lynchburg (Pop. 361), Tennessee 37352
*Placed in the National Register of Historic Places by the United States Government.*

*By Michael Olmert*

# *It's hard enough to say it, let alone to remember it*




Mnemosyne, to the old Greeks, was the goddess of memory.

Today, however, Mnemosyne is better known to some as the ancestor of the word "mnemonic" or the more popular term, "mnemonic device"—which is to say, a memory aid. The word itself could do with some help in terms of spelling and pronunciation; still, it's probably best to think of a mnemonic device as a symbolic verbal string.

Everybody knows a few: "Bless My Dear Aunt Sally" taught us all the correct order for algebraic operations (brackets, multiply, divide, add and subtract). Likewise, "Men very easily made jugs serve useful nocturnal purposes" set the planets in our solar system (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto) for those who cared.

Colin Fletcher, author of hiking manuals, even recommends that hikers construct their own mnemonics as a cure for boredom. His interest in scientific names of the plants and animals along his wilderness paths once led him to develop a way of remembering the taxonomic groupings—kingdom, phylum, class, order, family, genus, species. His solution: "King Philip, come out, for God's sake!"

Man has depended on mnemonics for a long time. The Greeks and Romans used them. In the 11th century, Guido of Arezzo taught the musical notes Ut, Re, Mi, Fa, Sol, La (later, Ut was changed to Do and Ti was added) after key syllables in his hymn to St. John the Baptist.

Aside from passing tests, however, mnemonic devices also have an undeniable attraction: they entertain. It is one thing to *know* the value of $\pi$ to the 20th place; it is quite another to know:

*Sir, I send a rhyme excelling*
*In sacred truth and rigid spelling*
*Numerical sprites elucidate*
*For me the lexicon's dull weight.*

If the reader is alert he will notice right off that counting the number of letters in each word of this verse results in 3.14159265358979323846: the value of $\pi$ to the 20th place.

The sprightly flavor of memory devices is nowhere more celebrated than in *A Dictionary of Mnemonics**. Its 93 pages list mnemonics old ("Divorced, beheaded, died; divorced, beheaded, survived"—for the outcomes of Henry VIII's serial monogamy) and new ("Camels often sit down carefully. Perhaps their joints creak? Early oiling might prevent permanent rheumatism.") Here, the first letter of each word puts you in mind of the great geological periods, Cambrian, Ordovician, Silurian, Devonian, Carboniferous, Permian, Triassic, Jurassic, Cretaceous, Eocene, Oligocene, Miocene, Pliocene, Pleistocene, Recent.

Similar constructions detail the plagues of Egypt: "Retaliating for long frustration, Moses badgered hostile leader demanding freedom" (river to blood, frogs, lice, flies, murrain, boils, hail, locusts, darkness, first-born); the Wars of the Roses: "A boy now will mention all the hot, horrid battles till Bosworth" (St. Albans, Blore Heath, Northampton, Wakefield, Mortimer's Cross, 2nd St. Albans, Towton, Hedgeley Moor, Hexham Barnet, Tewkesbury, Bosworth.

Another form of mnemonic results from a sort of forced public recitation. Altar boys have been known to irreverently replace *"Ora pro nobis"* with "All wipe your noses" during a litany. Actually, this too has been going on since the Middle Ages and is known as "troping the text." Unlike most true mnemonics, the trope becomes more important and widespread than the actual words it replaces. Thus, New York schoolchildren, reciting the *Our Father,* may say "and lead us not into Penn Station." An English version of the *Marseillaise* tropes the text as: "Alonzo fondled up a trio, insure the car, guitar away. . . ."

In the end, however, it is the pure mnemonics that survive. Who can resist filling out his knowledge of Britain's kings and queens (from William the Conquerer) with:

*Willie, Willie, Harry, Stee*
*Harry, Dick, Harry Three,*
*One, Two, Three Neds, Richard Two*
*Harry Four, Five, Six. Then who?*
*Edward Four, Five, Dick the Bad,*
*Harrys twain and Ned the Lad,*
*Mary, Bessie, James the Vain*
*Charlie, Charlie, James again,*
*William and Mary, Anna Gloria,*
*Four Georges, William, and Victoria.*
*Edward the Seventh next, and then*
*George the Fifth in 1910.*
*Edward the Eighth soon abdicated*
*And so a George was reinstated.*

Elizabeth II is still a problem.

Victims of total recall arise! You have nothing to lose but your embarrassment. As for the rest of us, all we need is a way of remembering the mnemonics in the first place.

* © 1972, Eyre Methuen Limited

# Jeep Wagoneer...
# a reflection of the man who drives it

**Jeep Wagoneer–Built for the man in charge, demanding excellent performance no matter how bad the weather or how poor the road conditions. Wagoneer is specifically designed to meet not only his everyday transportation needs, but also for overcoming those off-the-road obstacles leading to his country life—the place where he really lives.**

**Jeep Wagoneer–Spaciously comfortable with all the most wanted options standard. They include automatic transmission, power steering, Quadra-Trac®, Jeep's exclusive automatic 4-wheel drive, power front disc brakes and a powerful 360 V-8 engine.**

**Jeep Wagoneer–Exceptional, commanding, unique. The vehicle that reflects a very special man's lifestyle.**

**Jeep Corporation, a subsidiary of American Motors Corporation**

**Jeep®**

## We wrote the book on 4-wheel drive

**Before you buy a color TV:**
Here's something you might like to know. In the latest nationwide survey of the opinions of independent TV service technicians, one brand, more than any other, was picked for highest quality and fewest repairs. Zenith. For the sixth straight year.

ZENITH®
CHROMACOLOR® II
The quality goes in before the name goes on.®

The Panorama VI, SJ2541X, in Silver color with simulated Rosewood top and ends. Simulated TV picture. For details of survey opinions mentioned above, write to VP, Consumer Affairs, Zenith Radio Corp., 1900 N. Austin Ave., Chicago, Ill. 60639.